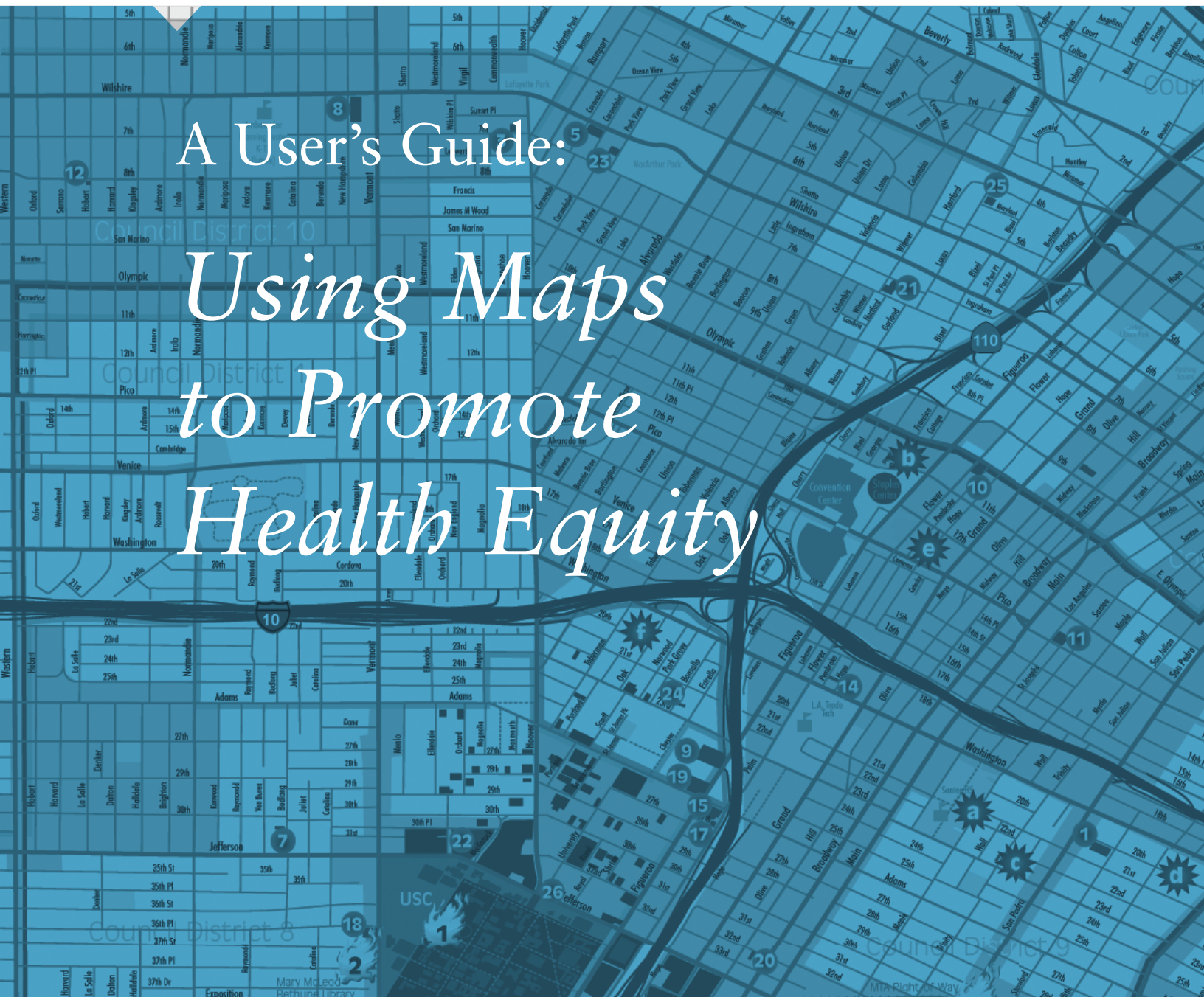




The **Opportunity** Agenda

*Building the National Will
to Expand Opportunity in America*



A User's Guide: *Using Maps to Promote Health Equity*

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Table of Contents

Executive Summary	3
Using Maps and Mapping Tools to Promote Health Equity	4
GIS and Public Health Practice	7
University-led Initiatives	8
Journalism and GIS	9
Community Mapping for Health Equity Advocacy	10
Internet-Based Mapping and GIS	13
Research and Scholarship on Geography and Health Risks	15
Data Challenges and Limitations	15
Recommendations	16
Conclusion	19

Executive Summary

Many communities remain highly segregated by race and ethnicity, and predominantly communities of color tend to suffer from disinvestments that negatively shape health opportunities. Maps can help a range of audiences better understand the relationship between public and private investments in place and the health of community residents. This is particularly important to building public and policymaker will for action to address racial and ethnic health inequities. Maps—and the act of creating them—can help communities organize and give voice to their concerns, advocates visualize the common geographic frame of community problems, journalists tell a deeper story about structural inequities and their relationship to health, and public health practitioners develop strategies to improve the spatial distribution of health resources. This report attempts to identify promising practices in these sectors to encourage the broader and more effective use of maps as a tool toward the goal of creating equitable health opportunities for all.

Maps have the potential to describe problems and solutions in accessible ways to a wide range of audiences. Successful maps can create a common understanding of problems; for health equity campaigns, maps can provide an entry point for understanding structural inequalities in access to power and resources that coincide with residential segregation and other community dynamics. Maps should be clear and concise, however, and should point to solutions such as place-based investments. In particular, interactive, Internet-based mapping is a promising practice that should be encouraged. Interactive Web-based maps have an advantage over “static” maps in that they allow users to select information that they wish to see displayed. Perhaps the most promising Internet-based maps allow users to post content that can be viewed by others. In this way, Internet-based maps can serve as an information “kiosk” that continually provides timely information.

Many audiences and sectors can play a role in advancing the use of maps toward health equity. For advocates, maps should be part of a multipronged strategy to achieve advocacy goals. Importantly, maps should be aligned with a communications strategy that engages affected residents and decision-makers. The most effective mapping efforts reviewed here were conceived and developed in the context of a broader communications strategy that considers the needs of target audiences. Where possible, scholars should work in interdisciplinary teams to construct maps that illustrate interconnections between the built and natural environment, social and economic forces, and demographic factors as they relate to health and health inequities. Funders should build the capacity and demand to create and use maps among key audiences, including their grantees, policymakers, and the media, and should support community-engaged mapping, which engages community members in gathering information and constructing maps. Journalists can use maps to provide context and help readers understand structural inequities that shape health. To improve public access to government-collected data, government agencies should clarify the appropriate uses of data and should clarify how privacy laws apply. It is important that all of these sectors work in concert to improve understanding among policymakers and the general public of the relationship between community conditions and health.

Using Maps and Mapping Tools to Promote Health Equity

Health inequality is deep and pervasive in the United States. Some people of color, people with low income, people who live in high-poverty communities, and many others have poorer health from birth (e.g., infant mortality) to death (e.g., premature deaths). Across the lifespan, they suffer from higher rates of disease and disability. And these problems begin early, adding to the erosion of opportunity for children who often face a constellation of other social and economic challenges.

A powerful force that sets the stage for health inequities is racial and economic segregation. Different social investments and resources in the places where different people live, work, study, worship, and play have a profound direct and indirect effect on health. Segregation, combined with patterns of disinvestment and neglect of segregated communities, concentrates poverty and excludes and isolates communities of color from the resources needed for socioeconomic equality and health.

Maps have long been used in public health and sociology to illustrate the geographic distribution of disease and mortality and to describe and analyze the social context of health problems. Similarly, urban planners, demographers, and others have used maps to better understand how to improve land use, the built environment, and other community conditions to promote population health and well-being. Although these tools traditionally have been the purview of scholars and policymakers, in recent years a proliferation of new technologies, particularly geographic information systems (GIS) and Internet-based maps and mapping tools, offer the potential for maps to be used more widely to communicate to broader audiences and to involve community members in policy decisions and keep them informed.

Because of advancements in technology, many health equity stakeholders can take advantage of the promise of mapping tools. Maps allow policymakers to better understand the spatial distribution of health risks and resources and to plan and implement policies that improve community conditions for health. Maps can provide an infrastructure for public health surveillance and provide researchers with tools to identify spatial patterns in the distribution of health risks and resources to generate new hypotheses regarding these patterns and to analyze spatial relationships. Maps provide advocates with better visual tools to illustrate spatial inequality and to articulate how spatial patterns relate to health. Maps also allow journalists and news media organizations to

“People feel like they understand maps. Nobody will give you feedback on a regression analysis.”

—Interviewee, Kirwan Institute study of GIS and social justice

illustrate the social and community-level contexts of health in ways that traditional reporting cannot. In the private sector, maps are used to identify new markets and to understand consumer behavior.

Maps are increasingly being used by these key stakeholders—policymakers, advocates, journalists, researchers, corporations, and ordinary citizens. Many promising practices are emerging, such as the use of maps to help community members define and create displays of neighborhood conditions. As yet, however, no review has assessed how maps and mapping tools are being used to promote health equity or to understand their potential for building public and policymaker understanding of the importance of place for health. This report will review some of the most promising applications of maps and mapping tools for health equity and will provide recommendations to advance the field.

To conduct this review, we asked experts who have worked extensively with mapping tools and data in a variety of fields—including advocacy, journalism, government, public health practice, and academic scholarship—to examine key issues, challenges, and opportunities for using maps to build momentum for equitable health opportunity in the United States. We asked them to identify important case examples and draw from their experience to answer the following questions: What are the most promising current uses and potential future uses of maps to promote health equity? What are the barriers to their use? Under what circumstances are maps most helpful? How might they present unintended negative consequences?

Their papers and our review of important case examples suggest that maps are most useful when the following conditions are met:

- ▶ ***The maps support a clear policy goal.*** Whether the goal is to increase the availability of healthy and nutritious foods in a community or to mitigate environmental health risks, having a clearly defined policy objective allows map creators to better illustrate the problem and identify potential solutions.
- ▶ ***The “client” is clearly defined.*** On whose behalf is the map being created? Clarity on this question is important to help map creators avoid conflicts of interest, understand potential ethical challenges in the use of maps (more on this below), and understand who and how clients should be involved in the creation of maps.
- ▶ ***The audience is clearly defined.*** Maps can and should be tailored to the audience(s) that they are intended to inform. In most cases, policymakers or other decision-makers (e.g., elected officials, agency officials) are the key audiences for maps. Increasingly, however, intended audiences include community members, news media and media consumers, community members, scholars, advocates, or other groups. The method and manner in which maps are constructed should reflect the needs of the specific audiences for whom they are created.
- ▶ ***Desired outcomes are clearly defined.*** Maps should be created with specific outcomes defined ahead of project initiation, and their evaluation should be anchored in their specific intent and purposes. For example, health maps created for and disseminated within scholarly circles typically seek to increase knowledge and understanding of the spatial dimensions of health inequality; they may also seek to inform public health practice and policy. Maps created for advocacy purposes, however, might seek to shape community understanding, improve organizing, and build a power base to move a policy agenda. Having clarity of these desired outcomes can help map creators better evaluate the effectiveness of maps.
- ▶ ***Data challenges and barriers are clearly understood and addressed.*** As will be discussed in greater detail later in this paper, data to display on maps can be difficult to access, quickly become outdated, and/or have inaccuracies. These challenges can raise a number of ethical and methodological issues, some of which are discussed later.

Once these issues regarding the appropriate uses of maps are addressed, map creators should turn their attention to the many ways in which the effectiveness and quality of maps can be evaluated. Evaluation should include an assessment of the quality of the maps themselves along with their uses and intended (and unintended) effects.

The quality of maps can be assessed by attending to the following:

- ▶ **Documentation**—Data sources should be clearly documented, and where primary data are mapped, methods for data definitions and collection should be described.
- ▶ **Data quality**—Data timeliness, reliability, and validity are key issues that should be documented.
- ▶ **Transparency**—Data collection, analysis, and geocoding methods should be publicly disclosed.
- ▶ **Cartography**—Maps should conform to appropriate cartographic standards.
- ▶ **Clarity**—To have the greatest visual impact, maps should be simple and clear and have high integrity.

The impact of a map can be measured by many different criteria, depending on the purposes for which the map was constructed:

- ▶ Was the map successful in shaping discourse among key audiences?
- ▶ Did the map reveal or clarify a relationship between place and health?
- ▶ Did the map generate, or effectively provide context to, news media coverage?
- ▶ Did the map increase awareness among key audiences?
- ▶ Would the map creators or target audiences use the map again?
- ▶ Did the map foster broader discussion and participation in change efforts among target audiences?
- ▶ Did the map help to bring communities together and enlarge advocacy constituencies?
- ▶ Did the map contribute, directly or indirectly, to policy change?

Additional evaluation questions are warranted for Internet-based maps:

- ▶ What is the map's level of interactivity? How is the tool experienced by users? Does it communicate intended messages?
- ▶ How "viral" is the map tool? Does evidence suggest that the tool is spreading among intended online constituencies?

Many different communities produce and use maps to understand place and health and to contribute to policy solutions. These include public health practitioners, university-based scholars, advocacy and community groups, journalists, and others. In the following sections, we explore some of the most successful approaches in these sectors.

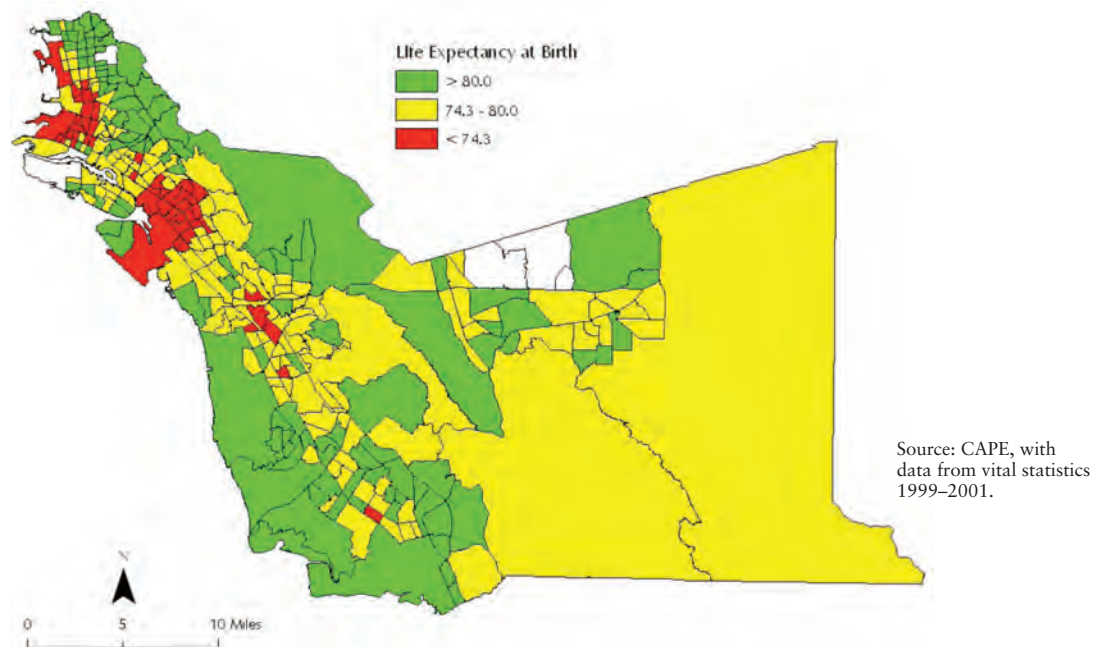
GIS and Public Health Practice

To address health inequality, a growing number of public health departments are turning to maps and geographic information systems to help policymakers and the general public make the connection between social and economic inequality and health. These maps commonly illustrate the relationship between place of residence and health, health risks, and health resources.

The most effective of these maps broaden viewers' understanding of how place-based risks, resources, and investments shape health, moving beyond the narrow focus on biomedical and behavioral issues that predominate in news media reporting and public discourse on health. They also contextualize health inequities and point viewers toward systemic solutions. Using summary health indicators such as mortality or life expectancy, as Tony Iton points out in a paper prepared for this volume, can help map viewers move away from an "individual agency" frame—in which health outcomes are attributed solely to individual behavior—and understand the importance of socioeconomic and contextual factors for health.

Many public health departments that are working to address these root causes of health inequities are using maps that show the distribution of health using summary measures, and they show them in combination with data on the spatial distribution of wealth, income, educational attainment, and other resources. Iton's health department in Alameda County, Calif., has successfully created such maps and has subsequently helped to shape media reporting and policymaker discourse around health. For example, a recent report on health inequities in Alameda County featured the following map, which illustrates a 20-year gap in life expectancy between some of the most and least advantaged neighborhoods in the county. The map, and report, received prominent attention in the Bay Area's leading newspaper and continues to shape policy discussions.

Life Expectancy by Tract

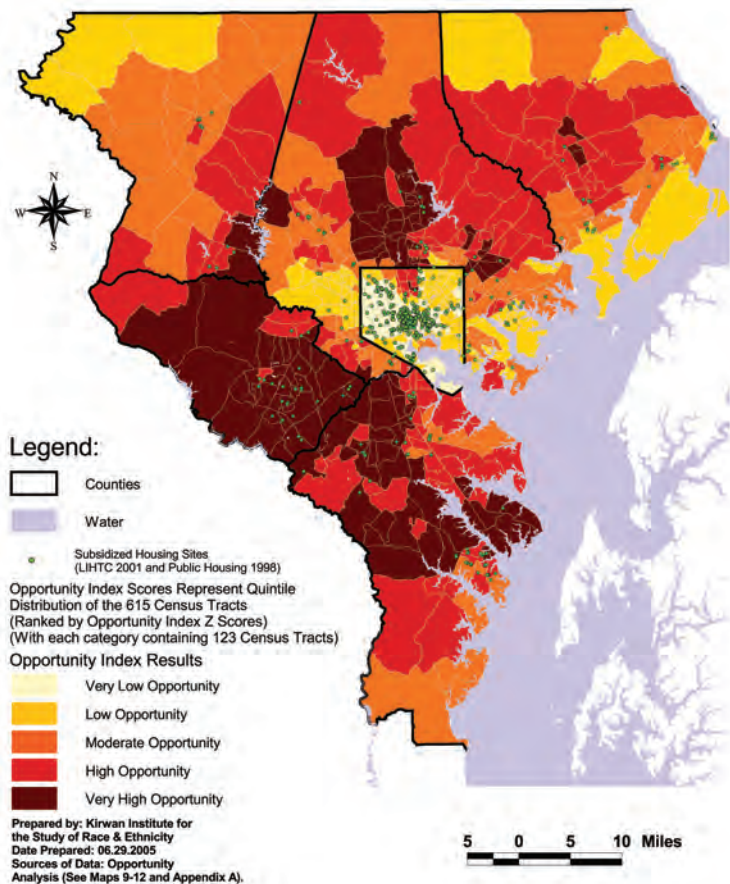


University-led Initiatives

University-based research groups have worked with several different types of organizations to create maps for purposes of advancing social policy. These organizations include legal aid groups, government and policy agencies, nonprofit advocacy agencies, and community/advocacy groups. Although there are many challenges to this work, numerous examples of successful mapping projects exist. Many of these efforts have been led by the Kirwan Institute for the Study of Race and Ethnicity at The Ohio State University, which has created maps and geographic analyses that have supported an array of advocacy activities, including litigation, in ways that clarify the spatial dimensions of health and, more broadly, opportunity (Jason Reece, Samir Ghambia, and their colleagues at the Kirwan Institute provide examples of this work in a paper prepared for this volume).

The Kirwan Institute’s “Opportunity Maps” are particularly potent and have been used successfully in helping to shape legal rulings, such as the court’s decision in the *Thompson v. HUD* case. The following map, presented in that case, illustrates the concentration of federally subsidized housing in “low-opportunity” communities in Baltimore—which are characterized by high poverty rates, poor housing, low educational achievement, and a host of other signs of public and private disinvestment—relative to higher opportunity communities in Baltimore and its surrounding communities. The use of a summary statistic—in this case, an index of opportunity based on a strong conceptual model—is one of the advantages of this approach in that it illustrates the multiple problems associated with concentrating subsidized housing in disadvantaged communities.

Comprehensive Opportunity Index for the Baltimore Region Overlaid with Subsidized Housing



The most successful university-led initiatives are grounded in strong community partnerships, Reece and colleagues note. Community partnerships are critical to identify issues and problem areas, to identify strategic intervention and policy solutions, and to ensure that the maps contribute constructively to public discussion. The partnerships work best when collaboration is actively sought at the outset of mapping projects and when community input is an ongoing process. Community-participatory mapping, for example, allows community members to define and geographically locate areas of concern. By fostering close partnerships, these maps can create ownership of the issue and empower the community.

Intermediary or “bridge” organizations can serve an important function in strengthening the linkage between academia, the community, and policymakers. These organizations help to foster relationships between local governments, scholars and academic research centers,

and community groups and can provide technical support for GIS and mapping. Some of these organizations can also collect and disseminate data from multiple sources, while using these data to address GIS analysis needs of clients.

Some of the significant challenges to deepening university–community mapping partnerships stem from the different purposes, goals, and institutional rewards inherent in these actors’ work, according to Reece and colleagues. Academic researchers are typically interested in seeking information and understanding—in this instance, understanding the relationship between health and place—whereas advocacy and community organizations typically have a position based on direct experience and are interested in shaping public and policymaker opinion and giving voice to community concerns. These goals can sometimes conflict, according to Reece and colleagues, but can be addressed by collaborating with intermediary organizations that may have a “foot in both worlds,” understanding research and methodology while having greater latitude to translate information into advocacy. In addition, these organizations can commit to working with communities over a longer time frame than is typically the case for university-based researchers. Importantly, university-created maps must also place a priority on simplicity and ease of understanding to help bridge scholarly and activist divides.

“People are able to look at the information based on where they live or areas they are familiar with and obtain a better understanding.”

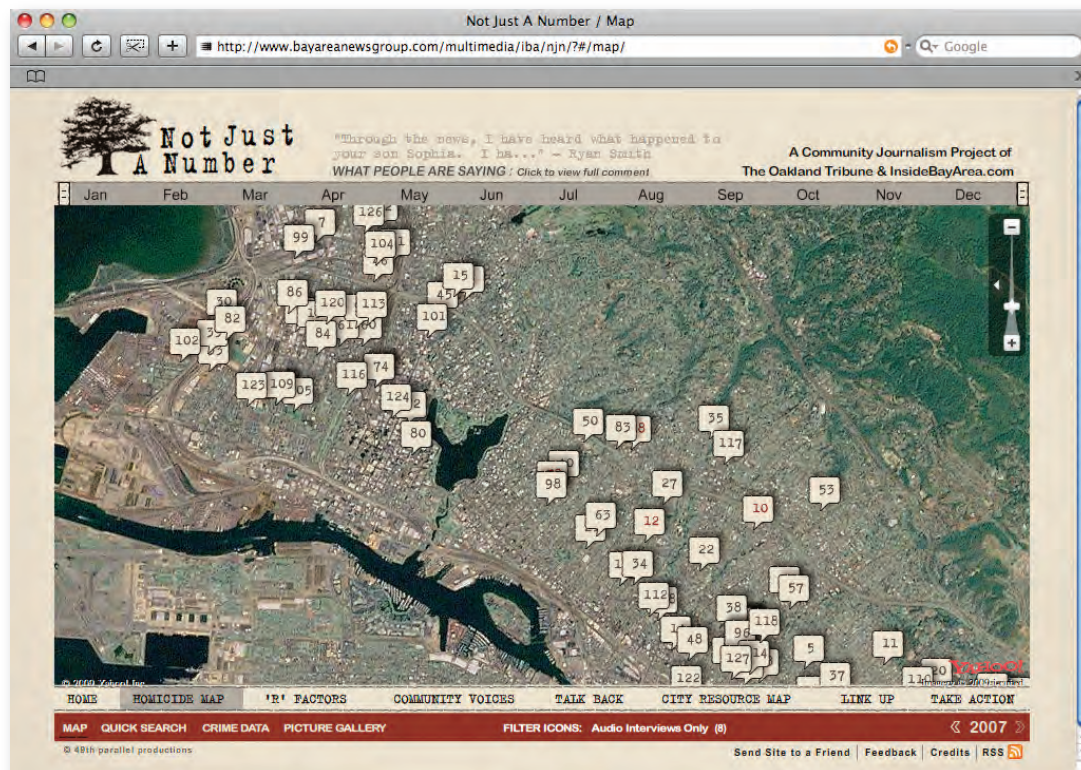
—Interviewee, Kirwan Institute study of GIS and advocacy

Journalism and GIS

As Craig Flournoy notes in this volume, journalists have a strong history of using maps to support reporting, and that practice—particularly online—has the potential to flourish. This is so despite the fact that the news industry is currently losing profits and shedding newspaper and broadcast jobs. New technology, lower costs, and strong training programs have allowed journalists to show how investment (or disinvestment) in place shapes the story. In the process, their work has helped to mobilize distressed communities and elevate the voices of their residents. This kind of geographic reporting, Flournoy suggests, can be a way of helping journalists both expand and better serve their audiences.

Online mapping is particularly promising, given the growth of online news media and Internet mapping applications. An example Flournoy cites is the Not Just a Number interactive Web site created by two journalists in 2007 (www.bayareanewsgroup.com/multimedia/iba/njn/#.com). This Web site provides greater depth to news reporting on homicides in Oakland by insisting, as the Web site's name suggests, that homicide victims are “not just a number.” An interactive Google Map allows viewers to see where homicides occurred in the city and provides information about the victims through multimedia content, such as streaming video of community vigils and interviews with victims' relatives. Just as important, it provides information on community-level risk and resilience factors, a forum for community expression and organizing, and information for linking with social services and community resources for help.

Not Just a Number Interactive Map of Oakland Homicide Data



A criticism of this Web site and other geographic reporting that must be addressed is the potential to further disadvantage marginalized communities by documenting their health risks, crime rates, or other deficits. Might not these maps tend to discourage investment and further stigmatize communities? This possibility seems likely absent deeper reporting to show how geographic investment shapes opportunity and how place-based strategies and policies can encourage investment and help turn around marginalized communities.

Community Mapping for Health Equity Advocacy

Community-based organizations and advocacy groups have also effectively harnessed mapping and GIS as a tool for health equity advocacy efforts. Sarah Treuhaft points out in this volume that the most effective uses of GIS by advocacy and community groups have emerged when maps have been tailored to different phases of the advocacy process. Policy campaigns begin by defining and framing social problems; maps can be powerful in illuminating these issues by showing concentrations of problems, comparing different communities, and analyzing associations. Maps can also expand advocacy efforts by engaging communities in identifying problems and model potential solutions and communicating messages to policymakers and the broader public. Intermediary groups often play a vital role in helping advocacy organizations by assembling data and constructing maps. To effectively incorporate community knowledge and give voice to community concerns, advocacy groups have also engaged in participatory mapping, a process in which community members help to create and add qualitative information to maps. Participatory mapping fosters community engagement; adds depth to geo-referenced data; and can be an important tool to help people define problems in their communities, interpret findings, and generate solutions. Community input can also be helpful in identifying community assets and resources, attributes that are often missing from research on health inequities.

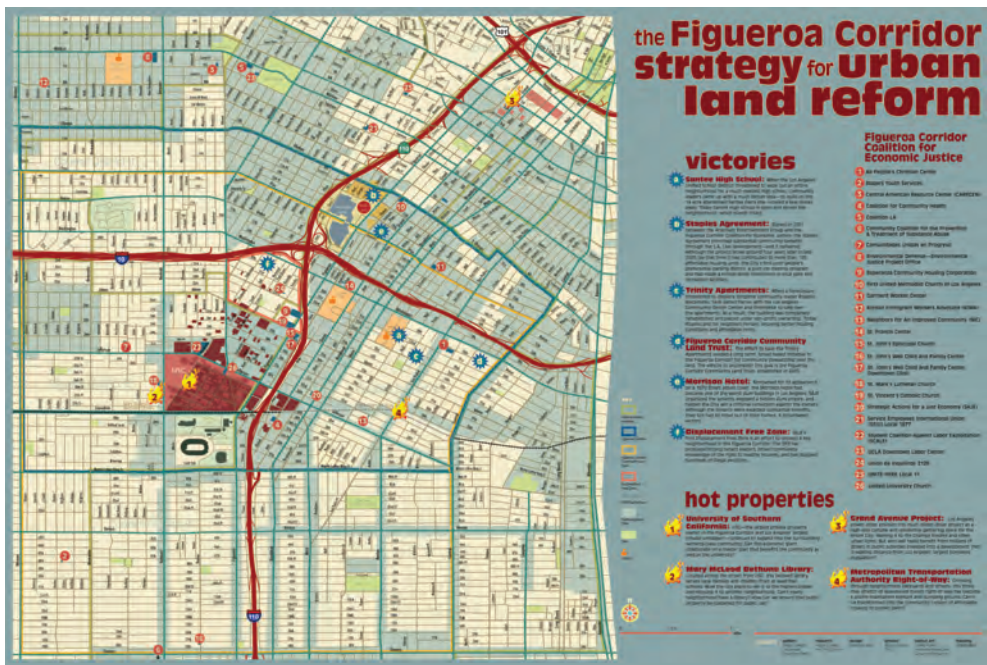
“There is a lot of community development occurring under some sort of asset-based model; most public data is collected on a deficit-based model.”

—Interviewee, Kirwan Institute study of GIS and advocacy

Although new GIS technology is becoming more widely available and easier for nontechnicians to use, it is important that advocacy groups ensure that the policy context, and not the technology itself, shape how maps are created and used.

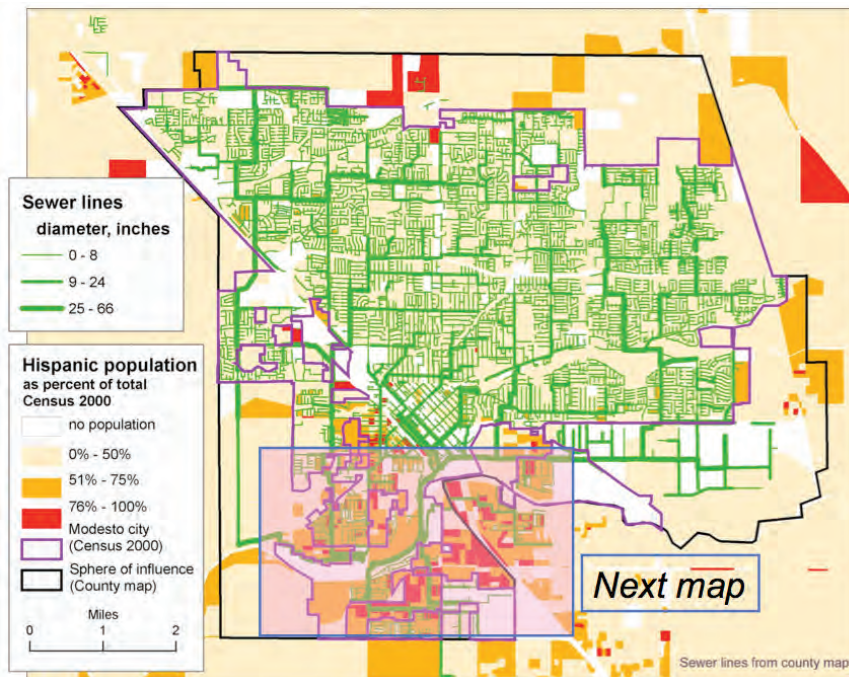
One of the most powerful examples of the use of maps to address structured inequities in land use and development is found in the maps created by the Figueroa Corridor Coalition for Economic Justice to respond to the proposed development of an entertainment and retail complex in downtown Los Angeles. Recognizing that the development project could displace the area’s overwhelmingly low-income African American and Latino residents, and that the benefits of development could bypass these communities, organizers mapped the neighborhood surrounding the proposed new project, illustrating ownership patterns and development “hot spots.” This mapping work drew significantly from community residents’ input, concerns, and ideas for how the development could benefit everyone in the community. A coalition of community groups then used the maps to negotiate a landmark community benefits package from the developer, which included requirements for local hiring for construction and other jobs emerging from the development, affordable housing and parks, and other benefits.

The Figueroa Corridor Strategy for Urban Land Reform



Another important example of a map that identified structured inequality and was used to support advocacy to address it can be found in the maps created by Ann Moss Joyner and the Cedar Grove Institute, with cooperation from the Lawyers Conference on Civil Rights, which mapped the growth of the city of Modesto over time to assess which communities were annexed and which were not. Joyner and colleagues found that the city readily annexed new, higher-income subdivisions and provided services such as sewer lines to these communities, while avoiding annexing and providing services to lower-income communities whose residents predominantly were people of color. Maps of the Modesto city limits showed that, over time, the pattern of absorbing wealthier communities while growing around low-income communities was clear. In addition, by mapping the placement of sewer lines, they were able to show that in some instances the city placed lines *underneath* communities that it chose not to annex in order to reach newly annexed communities. This mapping resulted in significant concessions by the city to annex communities it had previously ignored and/or to provide city services, such as sewer lines.

Modesto Sewer Line Placement



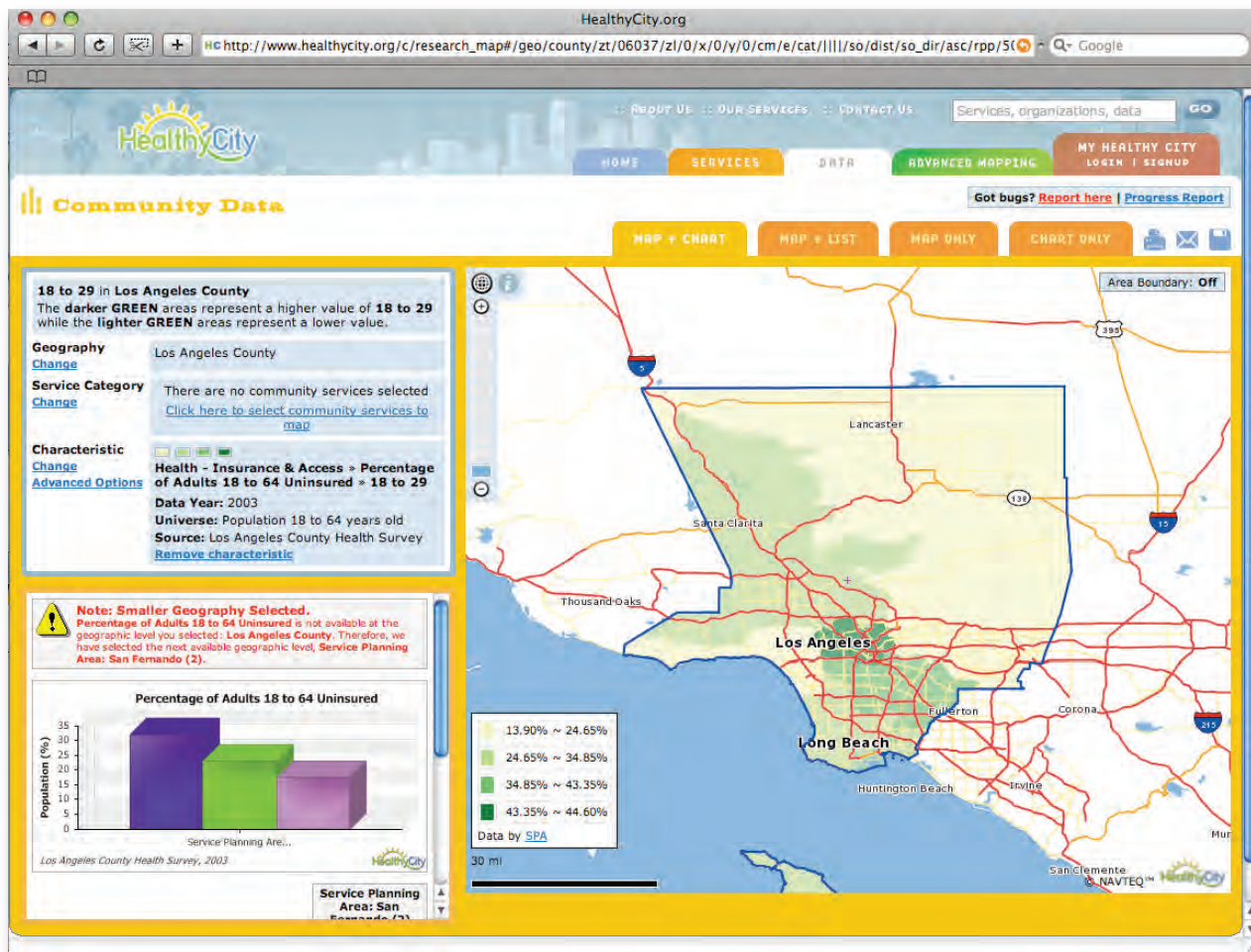
© Cedar Grove Institute

Internet-Based Mapping and GIS

GIS Web sites have proliferated with the popular Google Maps and other geographic Web platforms. Web GIS allows users to choose, access, and map a wide array of data and in more recent forms allows users to create and share information. Increasingly, public health practitioners, advocates, foundations, policymakers, and others are using Web-based mapping to understand the distribution of health and health inequities and to point to policy solutions. As Peter Manzo and Bill Pitkin note in this volume, Web GIS also allows for greater data “interoperability,” meaning that data from a wide array of sources can be combined to allow users greater access to an array of community information. Web-based GIS also makes geographic data more widely available, and its increasing ease of use ensures that less technically skilled users can have access to the analytic power of GIS. Advocacy groups therefore have the power through Web GIS to illustrate spatial relationships in their communities and use this information to press for policy change. Web GIS also has the potential to help a broad array of advocacy organizations understand how many of their social and economic concerns are geographically linked. For example, in many communities the problems of poor housing, low wages, inadequate schools and infrastructure, and environmental degradation are concentrated geographically. By mapping issues on a shared, Internet-based geographic platform, advocacy groups addressing housing, education, environmental justice, and the like can show how geographically targeted investments are needed. Manzo and Pitkin argue, however, that the use of these tools should be carefully tied to the concerns of communities that they are intended to benefit. “Durable community partnerships” are important to ensure the success of Web GIS projects.

Manzo and Pitkin point to the example of HealthyCity.org (<http://www.healthycity.org>) as a Web-based GIS tool that enables a wide array of government and private partners, and the general public, to understand geographic relationships between community characteristics and assets, electoral and school district boundaries, and demographic information. HealthyCity's twofold mission is to connect people to resources (e.g., to find geographically accessible health and social services) and to make data accessible for solving problems (e.g., by identifying communities that are under-resourced relative to needs). As a policy tool, HealthyCity has proved to be invaluable for community groups, foundations, and government agencies to assess the uneven distribution of public and private resources.

Health: Insurance and Access: Percentage of Adults 18 to 64 Uninsured: Los Angeles County



Research and Scholarship on Geography and Health Risks

Scholars have long turned to mapping and GIS to understand the geographic distribution of health; a growing body of this research, particularly in environmental health geography, demonstrates how spatial inequality contributes to health inequities. In this volume, Michael Jerrett and colleagues note that there has been rapid growth in the use of advanced GIS and spatial modeling to assess environmental health risks. This research has been important to document the health risks posed by issues such as increasing sprawl and automobile dependency, which has had many negative environmental, economic, and social consequences. For example, an influential recent study finds that residential segregation is associated with exposure to ambient air toxins and cancer risk, even when area-level socioeconomic factors are considered, and that cancer risk increased with increasing levels of segregation. Jerrett and colleagues propose a conceptual framework, or “geography of risk,” for special analysis in epidemiology and public health that assesses population health risks as a consequence not only of environmental exposure, but also geographies of susceptibility and adaptation.

Data Challenges and Limitations

Maps have the potential to “democratize” data, in that they make geographic information understandable and accessible to broader audiences. At the same time, however, there are many challenges to making data more widely available, as Michael Rodrian and James Watkins note in this volume. These include the following:

- ▶ ***Lack of guidance regarding public access to data***—Government agencies are sometimes reluctant to share data with research organizations, in many cases because of the high degree of risk if data are misused and because of confusion about the Health Information Portability and Accountability Act and other privacy laws and regulations. In some cases, agencies have been overly cautious, which hampers efforts to map data that can inform advocacy and policy. Guidance to government data stewards is needed to safeguard data while improving public access to it.
- ▶ ***Data imperfections***—In many cases data are imperfect. For example, data inconsistencies exist across geographic regions and jurisdictions, and data are often inadequate for small geographic areas or subpopulations. Map creators should consider the audiences for whom they are creating maps when weighing data appropriateness. In some cases even crude geographic data can

help to illustrate community-level problems for advocacy purposes. Courts and scholars have long held geographic analysis to rigorous standards, however, and therefore are not the audiences for limited data or analysis.

- ▶ **Integrity and credibility**—As advocates, policymakers, and health agencies increasingly use maps in conjunction with community-based participatory research and community planning, challenges to data and information may arise, particularly as data collection and mapping methods become less systematized and more “communal.” Community-based researchers should work with community partners to develop standards for geographic data collection and management. In addition, training and technical assistance for community-based organizations that want to use maps will build their sophistication and capacity to collect good geographic data.

Recommendations

Based on these case studies, it is clear that mapping has been effective and has the potential to be more effective in promoting health equity. We offer the following recommendations to achieve this goal.

- ▶ **Use maps to illustrate the structural factors behind health inequity.** Health equity initiatives should capitalize on the communicative power of maps. Maps have the potential to describe problems and solutions in accessible ways to a wide range of audiences. Successful maps can create a common understanding of problems; for health equity campaigns, maps can provide an entry point for understanding structural inequalities in access to power and resources that coincide with residential segregation and other community dynamics.
- ▶ **Ensure maps are clear and concise.** Advocates, scholars, journalists, and others often wrestle with the complexity of social problems and find that maps can illustrate the interrelationship of these issues. Multiple social and economic conditions contribute to health inequities, and map creators are often tempted to document them all. But maps should illustrate these relationships with clarity and simplicity. The use of summary measures, such as “opportunity” as defined and mapped by the Kirwan Institute, can help viewers understand the relationship between a wide array of community conditions and health.
- ▶ **Use maps to point to solutions.** Because maps have the potential to identify structural inequities that contribute to health inequities, they also can point to solutions, such as place-based investments. As noted previously, maps created by the Figueroa Corridor Coalition and LSNC offer powerful examples of maps that point to specific solutions regarding public and private investment in communities that have suffered from neglect and disinvestment.
- ▶ **Encourage the use of interactive, Internet-based mapping as a promising practice.** Interactive Web-based maps have an advantage over “static” maps in that they allow users to select information that they wish to see displayed. Perhaps the most promising Internet-based maps allow users to post content that can be viewed by others. In this way, Internet-based maps can serve as an information “kiosk” that continually provides timely information. Healthy City (www.healthycity.org), conceived and developed by the Advancement Project, is among the oldest and most sophisticated of these approaches. Internet-based maps have some limitations—for example, few sites have developed the capacity to allow users to print maps so that they can be shared in static form (Healthy City is a notable exception)—but they offer great potential to help participants identify issues of concern, thereby improving public understanding of how place shapes health and building online communities poised for action.

For Advocates:

- ▶ **Include maps as part of a multipronged strategy to achieve advocacy goals.** No matter how skillfully constructed, maps illustrating the geographic distribution of health are more powerful when generated and disseminated in the context of an advocacy or educational campaign. To be most effective, maps should be used in concert with strategies such as community forums, campaign organizing, and legal or policy analysis.
- ▶ **Ensure research objectives drive the way the way maps are constructed, not the other way around.** Mapping projects should not become “fishing expeditions” where spurious correlations are exploited in an attempt to foster social change. Rather, as the case examples cited here and in this volume’s papers suggest, map creators should begin by identifying the problem to be mapped and potential solutions and should design the map accordingly.
- ▶ **Align maps with a communications strategy that engages affected residents and decision-makers.** The most effective mapping efforts reviewed here were conceived and developed in the context of a broader communications strategy that considers the needs of target audiences.
- ▶ **Use maps to link issues and constituencies.** Neighborhood and community conditions are fundamental determinants of health that shape exposures, health behaviors, and access to health resources. Often, a range of community-level health risks—such as environmental health risks, poor schools, and inadequate access to health resources—cluster in communities of color. Yet advocacy and organizing to change these conditions is often “siloed” by issue area (e.g., campaigns to address environmental justice are rarely strategically linked to campaigns to address educational inequality, etc.). Maps have the potential to demonstrate to advocates, community members, and other audiences that these challenges often have common roots in the marginalization of communities of color and that policy solutions can effectively focus on improving these fundamental conditions.

For Scholars:

- ▶ **Where possible, work in interdisciplinary teams** to construct maps that illustrate interconnections between the built and natural environment, social and economic forces, and demographic factors as they relate to health and health inequities.
- ▶ **Partner early with intermediaries or community groups** to ensure that research is translated into accessible forms for relevant stakeholders.
- ▶ **Develop programs to assist local groups in community-engaged data collection and mapping** that meet empirical standards.

For Funders:

- ▶ **Build the capacity and demand to create and use maps among key audiences.** Although their sophistication is increasing, few advocacy or community organizations will spontaneously express a strong interest in maps, particularly if they have no prior experience using maps in an advocacy context. Yet organizations introduced to mapping report a wide range of benefits. Funders should help to create a consumer base for maps among key stakeholders, including their grantees, policymakers, and the media. This can be accomplished by supporting presentations to community and advocacy groups and by illustrating how maps can be used to define and point to policy solutions in more effective ways. In addition, funders can illustrate the potential of maps as a tool for accountability and model this by using maps to monitor the reach and distribution of resources.

- ▶ **Support community-engaged mapping.** Engaging people affected by mapped trends is crucial to identifying nuances, causes, and solutions. Community-engaged mapping is a promising practice and should be stimulated, and challenges and barriers to its broader use should be addressed. Funders should support efforts to build the capacity of communities to use and engage maps. These efforts should include training in methods to protect the integrity of data and information to be mapped and in the appropriate interpretation of spatial information. Such training will assist in the use of maps to “democratize” data.
- ▶ **Expand support for data intermediary organizations.** As noted earlier, data intermediaries play an important role in helping community and advocacy groups to access and create maps and analyze spatial data. With more support, their numbers and scope of work can expand to increase the use of maps to build community efficacy and help increase demand for mapping.

For Government:

- ▶ **Clarify appropriate uses of data, particularly with respect to privacy concerns.** As noted earlier, government agencies that collect data should clarify the appropriate uses of data and establish clear guidelines regarding public access. These guidelines should be clear and consistent across agencies, so that data stewards
- ▶ **Improve public access to government data.** After clarifying appropriate uses and promulgating guidelines for public access to data, government agencies should take appropriate steps to make data more available to a range of groups, including scholars, advocates, journalists, and others, and provide appropriate training to ensure that data privacy and integrity are protected. Perhaps as important, elected officials and government leaders should align incentives so that public accessibility of data becomes an imperative. Government agencies should be held accountable for the access, dissemination, and use of data that effectively shape policy. Agencies should demonstrate how data have been used to identify and rectify health inequities, and legislators should consider tying these goals to agency funding.
- ▶ **Collect more data at a localized level.** More support is needed for detailed survey data at local levels (e.g., census tract). Subpopulation data—such as on different Asian or Latin American nationalities, tribal nations, or race/gender combinations—is particularly needed. Such data would allow map creators to provide richer context and detail at smaller geographic levels. Of course, such data should be collected and reported in a manner that does not violate privacy.
- ▶ **Explore other sources of community data** aside from traditional, government-collected survey or population data. New mapping technology can allow government and other organizations to collect and build other kinds of data sources—such as crowd sourcing or community-generated data.

Conclusion

Maps can help a range of audiences better understand the relationship between public and private investments in place and the health of community residents. This is particularly important to building public and policymaker will for action to address racial and ethnic health inequities, given that many communities remain highly segregated by race and ethnicity and given that communities of color tend to suffer from disinvestments that negatively shape health opportunities. Maps, and the act of creating them, can help communities to organize and give voice to their concerns, help advocates visualize the common geographic frame of community problems, help journalists tell a deeper story about structural inequities and their relationship to health, and help public health practitioners develop strategies to improve the spatial distribution of health resources. For these reasons, we encourage their broader use, with the caveats that they should be used thoughtfully and in conjunction with other strategies to achieve social change. We expect that maps will serve as an important tool toward the broader goal of creating equitable health opportunities for all.

About The Opportunity Agenda

The Opportunity Agenda was founded in 2004 with the mission of building the national will to expand opportunity in America. Focused on moving hearts, minds and policy over time, the organization works closely with social justice organizations, leaders, and movements to advocate for solutions that expand opportunity for everyone. Through active partnerships, The Opportunity Agenda uses communications and media to understand and influence public opinion; synthesizes and translates research on barriers to opportunity and promising solutions; and identifies and advocates for policies that improve people's lives. To learn more about The Opportunity Agenda, go to our website at www.opportunityagenda.org.

The Opportunity Agenda is a project of the Tides Center.

About The Joint Center

The Joint Center for Political and Economic Studies, home of the Health Policy Institute, informs and illuminates the nation's major public policy debates through research, analysis, and information dissemination in order to: improve the socioeconomic status of black Americans and other minorities; expand their effective participation in the political and public policy arenas; and promote communications and relationships across racial and ethnic lines to strengthen the nation's pluralistic society.



The **Opportunity** Agenda

*Building the National Will
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