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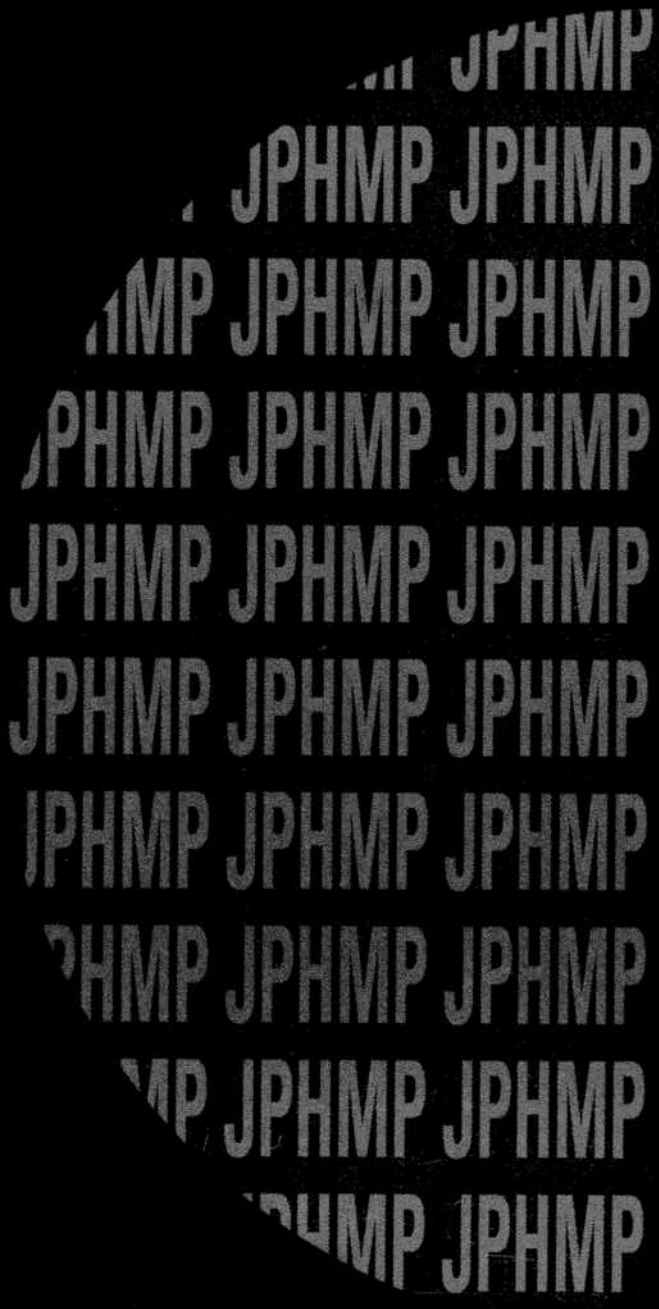

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Using the National Neighborhood Indicators Partnership to Improve Public Health

Embry M. Howell, Kathryn L.S. Pettit, Barbara A. Ormond, and G. Thomas Kingsley

The National Neighborhood Indicators Partnership (NNIP), a collaborative effort, uses local information in community building and policy making. A local intermediary in 19 NNIP partnership cities builds local data systems. Partners have learned five important lessons: (1) neighborhood-level data are essential for developing public policy, (2) technological advances have made it possible to maintain detailed local databases at relatively low cost, (3) various types of local organizations can serve as local partners, (4) good leadership is critical to building bridges across agencies, and (5) providing data is only the first step. Data must be used in ways that are visible, useful, and responsive to the community if the project is to succeed.

KEY WORDS: community-based research, neighborhood-level databases

The National Neighborhood Indicators Partnership

Partnerships between community organizations and research groups offer a way to increase the direct application of research findings to community needs. In such partnerships, community groups are involved in all aspects of the research including problem definition, data development, and interpretation and use of findings. The goals of the community and the researcher are not always completely congruent; thus, each must be willing to adapt usual ways of working in order to develop and maintain a successful partnership.

The National Neighborhood Indicators Partnership (NNIP), a collaborative effort to further the development and use of local information in community building and policy making, demonstrates one successful approach to community-based research (More information on the NNIP is available at its Web site: http://www.urban.org/nnip). The NNIP was established in 1995 with a mission to advance the development and use of local neighborhood information systems that can provide community groups with neighborhood-level data to foster community change. Funding for the partnership comes primarily from the Annie E. Casey and Rockefeller Foundations.

As the benefits of community-based research have become more widely known, interest in establishing such cooperative research ventures has grown. The six cities initially involved in the NNIP have been joined by an additional 13 cities (see Table 1). In each city, a local institution serves as the NNIP partner. These partners work with their communities to assess local problems and to identify sources of data pertinent to their needs. After assembling detailed data from a variety of sources, the local partner serves as a one-stop-shop that can provide recurrently updated neighborhood-level data to a variety of users in their cities. Each partner has a strong commitment to using information as a tool for community improvement and resident empowerment in struggling communities. With an operating philosophy of "democratizing information," the partners see their role as putting useful and reliable information into the hands of local leaders and helping these leaders use the information to promote change.

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TABLE 1 ● NNIP partner organizations

City	Organization	Web site
Atlanta, Georgia	Office of Data and Policy Analysis at Georgia Tech	http://www.arch.gatech.edu/~dapa
Baltimore, Maryland	Baltimore Neighborhood Indicators Alliance	http://www.bnia.org
Boston, Massachusetts	The Boston Foundation Metropolitan Area Planning Council	http://www.tbf.org
Camden, New Jersey	CamConnect	http://www.camconnect.org
Chattanooga, Tennessee	Community Research Council	http://researchcouncil.net
Cleveland, Ohio	Center on Urban Poverty and Social Change Case Western Reserve University	http://povertycenter.cwru.edu
Denver, Colorado	The Piton Foundation	http://www.piton.org
Des Moines, Iowa	Human Services Planning Alliance	http://www.humanservicesplanningalliance.org
Indianapolis, Indiana	The Polis Center United Way Community Service Council	http://www.savi.org
Louisville, Kentucky	Community Resources Network	http://www.crnky.org
Los Angeles, California	Advanced Policy Institute University of California at Los Angeles	http://nkla.ucla.edu
Miami, Florida	Community Services Planning Center Florida Department of Children and Families	http://www5.myflorida.com/cf_web/myflorida2/healthhuman/commserv/sfcspc/main_page.htm
Milwaukee, Wisconsin	The Nonprofit Center of Milwaukee	http://www.execpc.com/~npcm
New Orleans, Louisiana	Greater New Orleans Community Data Center	http://www.gnocdc.org
Oakland, California	Urban Strategies Council	http://www.urbanstrategies.org
Philadelphia, Pennsylvania	The Reinvestment Fund	http://www.trfund.com
Providence, Rhode Island	The Providence Plan	http://www.provplan.org
Sacramento, California	Community Services Planning Council	http://www.communitycouncil.org
Washington, D.C.	DC Agenda	http://www.dcagenda.org

Source: Data from the National Neighborhood Indicators Partnership.

Sharing experiences across communities and cities, and between the communities and outside researchers, contributes to the success of the NNIP. Representatives from all cities in the partnership meet biannually to share experiences.

The Urban Institute—a not-for-profit, nonpartisan research institution in Washington, D.C.—acts as a coordinator for the NNIP partners, providing technical assistance, processing national data sets for local use, and facilitating the sharing of tools and lessons learned among the partners. The Urban Institute provides technical assistance on research techniques, organizational strategy, and other common problems. For example, the use of small area data can be analytically problematic.[1–4] The Urban Institute researchers are available to provide guidance on this and similar analytic issues of common concern. In addition, as part of its coordinating function, The Urban Institute has produced guidebooks on data collection, analysis, and dissemination designed to share successful techniques across all the partner sites.[5] The Urban Institute also is processing data from the 2000 census, and adding it to information from decennial censuses since 1970 to create nationwide, tract-level indicators of neighborhood change over a 30-year period for use by the partners.

In most cities, integrating data from a variety of city agencies has been an inefficient process, since data on various aspects of communities are scattered across different agencies. In the NNIP cities, the task of building a data system is given to one intermediary, the NNIP partner. This partner gathers the disparate sets of data to create a common data warehouse. Geo-coded local data are added to nationally available, tract-level data from the decennial census. Centralizing this task allows the creation of a richer, more consistent data set that all groups can use, creating both an improvement in the quantity and quality of available data and a savings to local users.

The NNIP partner also is charged with maintaining and updating the database. Operating under long-term data-sharing agreements with various public agencies, the partners obtain new data (annually or more frequently in some cases), integrate it into their systems, and make it available to users for a variety of purposes. The data cover topics such as births, deaths, crime, health status, educational performance, public

TABLE 2 ● National neighborhood indicators partnership local data inventory (as of May 1, 2002)*

	Atlanta	Baltimore	Boston	Cleveland	Denver	D.C.	Indianapolis	Miami	Milwaukee	Oakland	Providence
Census and vital statistics											
Birth and death certificates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Socioeconomic statistics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Housing data											
Tax delinquency	✓	✓		✓	✓	✓			✓		✓
Property tax assessment						✓					
Parcel characteristics/vacancy	✓		✓	✓						✓	✓
Section 8 vouchers		✓			✓	✓					
Scattered site public housing											✓
Public housing units	✓			✓		✓				✓	✓
Code violations	✓	✓									✓
Building permits						✓					
School data											
Student enrollment/performance	✓	✓	✓	✓	✓	✓	✓			✓	✓
Student assessment											✓
Special education			✓			✓	✓				✓
School locations	✓	✓		✓	✓	✓				✓	✓
Free/reduced lunch		✓			✓					✓	
Public assistance											
WIC		✓							✓		✓
Subsidized child care		✓		✓		✓					
Medicaid				✓	✓						✓
General assistance		✓	✓	✓	✓						✓
Food stamps	✓	✓		✓	✓		✓			✓	✓
AFDC/TANF	✓	✓		✓	✓	✓	✓			✓	✓
Crime statistics											
Reported crimes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Police calls			✓	✓		✓					✓
Coroner's reports				✓							
Community police stations					✓						✓
Child abuse/neglect		✓		✓	✓			✓			✓
Arrests						✓			✓		
Hospital and health services											
Lead paint abatements		✓							✓		
Immunization	✓	✓							✓		
Hospital admissions		✓	✓								✓
Economy											
CDBG expenditures			✓	✓							✓
Employment	✓	✓	✓	✓	✓					✓	✓
Business inventory											✓
Asset/deficit inventory											
Recreation centers		✓			✓	✓				✓	✓
Places of worship	✓			✓	✓	✓				✓	✓
Community organizations		✓		✓	✓				✓	✓	✓
Liquor store licenses		✓									
Grocery stores, drug stores, markets, and other businesses	✓		✓	✓	✓					✓	✓
Fire stations					✓						✓
Family planning services	✓	✓								✓	✓
Drug rehabilitation services		✓				✓				✓	✓
Child care	✓	✓	✓	✓	✓	✓				✓	✓
Banks	✓		✓	✓	✓					✓	✓

CDBG, community development block grants.

*Local data inventories for other partners are currently not available.

Source: Data from the National Neighborhood Indicators Partnership.

assistance, and property conditions (see Table 2). Confidentiality agreements in place between the partners and the local data sources have made it possible to share very detailed data.

NNIP partners use the data to create products such as maps and tables that highlight neighborhood indicators or other accessible community-level information packaged as reports or short brochures. This output has already had important practical benefits. For example, NNIP data have been used to map the location of potential jobs for those leaving welfare and to show the distance of such jobs from their homes. The goal is to stimulate improvement in transportation systems. This timely and detailed information sharpens the focus on critical issues and adds spatial considerations to the analysis of local problems. Through such data analysis, the NNIP has the potential to enhance the effectiveness of local governance in partner cities.

The NNIP partners represent a range of organizations from private foundations to local government agencies; most are independent nonprofits. Because they are outside of government and sponsored by community foundations or other institutions with a mission to support civic improvement over the long term, they are not seen as being aligned with any short-term political interests. They are, therefore, in a good position to earn and maintain the trust of a broad range of local stakeholders, including the many agencies that provide them with data. Their ability to convince the data providers that all are better off by sharing data through an unbiased intermediary has been critical to their success.

The NNIP cities represent a broad range of communities with respect to population size and region of the country—from Camden, New Jersey with 80,000 residents to Los Angeles, California. In the large metropolitan areas such as Los Angeles and Philadelphia, the partners have tended to concentrate on specific sectors, such as housing, in order to make their tasks more manageable; in the smaller communities, the range of activities is broader. While currently all the partners are in urban areas, any size community can theoretically use the NNIP model. While the geographic proximity offered in an urban setting is helpful, rural areas also could come together in this manner to address common issues. The process might differ because of the distances involved with, for example, teleconferencing replacing community meetings.

Creating Local Health Indicators in the NNIP

A growing number of health services research projects have demonstrated the value of small area data in analyzing neighborhood-level trends in health status and the effects of neighborhood conditions on health. A range of health problems, including birth outcomes,[6–9] cardiovascular health,[10] asthma,[11] and mortality[12,13] have been shown to be correlated with neighborhood variables such as concentrated poverty. These studies have provided local health departments and communities with the information needed to target health interventions more efficiently. However, findings from these analyses are limited to selected health indicators and defined geographic areas. Adding additional health indicators to the NNIP databases can increase the number of cities where such neighborhood-level analyses will be possible.

The NNIP partners are currently working to expand the range of health indicators available in the NNIP databases. The integration of health data into the NNIP is a new area of focus for most partners, and the partners vary in the degree to which they have been able to move forward in this area. Having relevant data at the local level will always remain a challenge, particularly for low-incidence outcomes such as low-birth-weight births. The following are some examples of the health-related indicators that are already present in the databases of one or more partners, and some of the enhancements they would like to make:

- *Prevalence of health conditions.* Vital statistics from local public health department records have been processed by most partners. Indicators used to date include teen births, prenatal care, low-birth-weight births, deaths, and infant deaths. Some partners also have obtained and processed immunization data and hospital records for some time periods. One site has mapped hospital admissions for asthma. Partners have expressed interest in looking at a broader range of health conditions such as the incidence of sexually transmitted diseases. One community is interested in relating child health indicators to other neighborhood indicators such as school achievement, high school completion, and juvenile arrests.
- *Housing.* Living in housing of poor quality may affect the prevalence of certain health conditions such as lead poisoning, asthma, injuries, or low birth weight. The national NNIP database has data on housing characteristics from the census (median rents, median home values, rental vacancy rates, percentage of housing with inadequate kitchen or plumbing), and many of the partners have added additional housing information such as code enforcement and home assessments. Partners have expressed interest in identifying specific code violations that relate to lead paint exposure or potential injuries so that they can pinpoint houses and communities where housing quality poses health risks for community residents.

- *Environmental quality.* Emerging research has illuminated the link between poor environmental quality and poor health status. Some of the NNIP partners already are tracking environmental health indicators such as water quality and hazardous materials reports. Some partners have included data on blood lead levels for children in their database. The EPA has developed several national-level databases that could be merged with the NNIP data at the census tract level. For example, information that is routinely geocoded by the Environmental Protection Agency includes the presence of Superfund sites and air quality measures. In addition, some partners want to identify ways of measuring neighborhood traffic volume both as a quality-of-life indicator and as an indicator of possibly higher levels of air pollution.
- *Community health and social services.* Many partners are cataloguing "community assets" in their databases. Health-related assets include the location of drug stores, child care providers, substance abuse treatment services, and family planning services. In addition, many partners track health-related program participation by community members including the number of Aid to Families with Dependent Children/Traditional Aid to Needy Families (AFDC/TANF) recipients, food stamps recipients, general assistance recipients, Medicaid enrollees, child care assistance recipients, and Women, Infants, and Children (WIC) Supplemental Nutrition Program recipients. There is interest in mapping health services by type of provider and by access for the uninsured and Medicaid beneficiaries.
- *Neighborhood and family violence.* Safety is a high priority for the communities with which the partners work. The NNIP has incorporated extensive data on crime, and some partners are tracking reports of child abuse and neglect as well as arrests and convictions for other violent crimes. Partners want to use the extensive crime data in the NNIP to develop public health indicators of neighborhood and family violence. For example, one community is interested in looking at the effect on children of witnessing or being the victim or perpetrator of a crime.
- *Nutrition.* In mapping community assets, some partners have included the location of grocery stores and liquor stores; in tracking social services recipients, some have included the number of free/reduced-price lunch recipients or WIC program participation. These indicators could form the basis for investigating neighborhood nutritional status and its correlates. Several partners are interested in developing measures of obesity. For example, one community is interested in looking at the relationship between childhood obesity and socioeconomic conditions including nutrition and barriers to exercise participation.

Having relevant data at the local level will always remain a challenge, particularly for low-incidence outcomes.

Figures 1 and 2 illustrate how NNIP health data have been used to provide a profile of prenatal care use and blood lead levels in two cities, as examples of the types of analyses possible using the NNIP databases.

Under a contract with the U.S. Department of Health and Human Services, health-related projects are being undertaken by five NNIP partners. As part of the same project, The Urban Institute is undertaking a special cross-site analysis of selected health indicators such as teen pregnancy, prenatal care use, and low birth weight. These projects demonstrate the variety of data sources and issues that can be addressed through the community-research partnerships such as NNIP.

Cleveland is developing neighborhood indicators of child access to primary care using eligibility, claims, and encounter data from Ohio's Medicaid data system. The results will be presented to several local organizations to aid in their initiatives, including the Early Childhood Initiative, as well as to the Cuyahoga County health and nutrition staff.

Denver is exploring: (1) the proximity and concentration of environmental hazards to areas with large concentrations of children, typically in Denver's poorer neighborhoods, and (2) violence as a public health issue for children using data files on crime, violent deaths, and child abuse and neglect. Both analyses will include the relationship of health risks to neighborhood characteristics.

Indianapolis is using spatial analysis to study the relationship between community conditions and obesity in children in Marion County from 1998 to 2000. Variables to be analyzed include diet, socioeconomic conditions, proximity to exercise opportunities, and social barriers to physical activity. The partners hope to use these results to develop programs to promote healthy lifestyles.

Oakland is developing indicators of communicable diseases using registries of tuberculosis, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), and sexually transmitted diseases. They will use these files to prepare indicators for all neighborhoods in the city, and they will work directly with the Lower San Antonio and West Oakland communities to better help the residents identify and address these health issues.

Providence is undertaking an analysis to determine the extent of mobility of young children, the likelihood

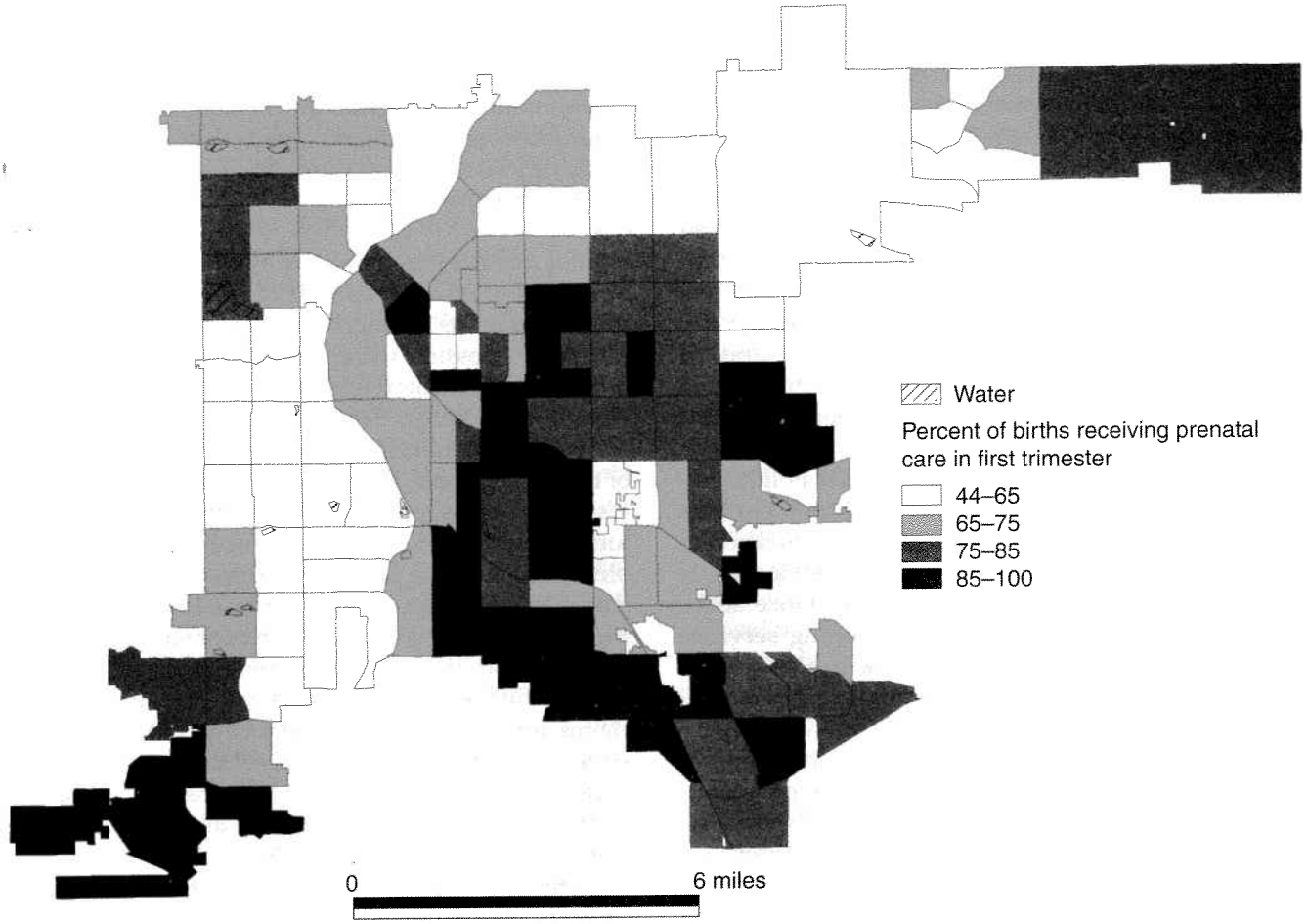

FIGURE 1. Births receiving prenatal care in the first trimester in Denver by census tract, 2001. Source: Permission granted by the Piton Foundation. These data were supplied by the Health Statistics Section of the Colorado Department of Public Health and Environment, which specifically disclaims responsibility for any analyses, interpretations, or conclusions it has not provided.

that a child will move, and the impact of mobility on receipt of child health care services. It is assessing the continuity of care using data on WIC program participation, timely blood lead screenings, and consistent care with a primary provider.

Lessons from the Early Years of the NNIP

The NNIP has shown that in many cities it is possible to overcome barriers to sharing data, and that making data available at the neighborhood level can be a catalyst for change. When neighborhood data are available, communities have a greater motivation to take ownership of the identified problems and work for their solution. As the experience of the partners shows, the range of health problems that can be approached in this manner is broad. For other communities that hope to adopt similar approaches, the first seven years of the NNIP have provided several lessons in how to achieve a successful data integration and data-sharing partnership.

The first lesson is that, for most purposes, citywide indicators provide insufficient detail to address community concerns. Many of the most important urban issues simply cannot be understood without knowledge of differences in conditions and trends across neighborhoods. Detailed data allow community groups, government agencies, community foundations, and other local agencies to better guide and monitor their investments by highlighting how conditions, trends, and program effects vary across neighborhoods. Local specificity is particularly important in the area of health and prevention, where culture, environment, custom, and services come together to affect the health status of the local population.

Second, advances in technology over the past decade have made it possible to maintain detailed local

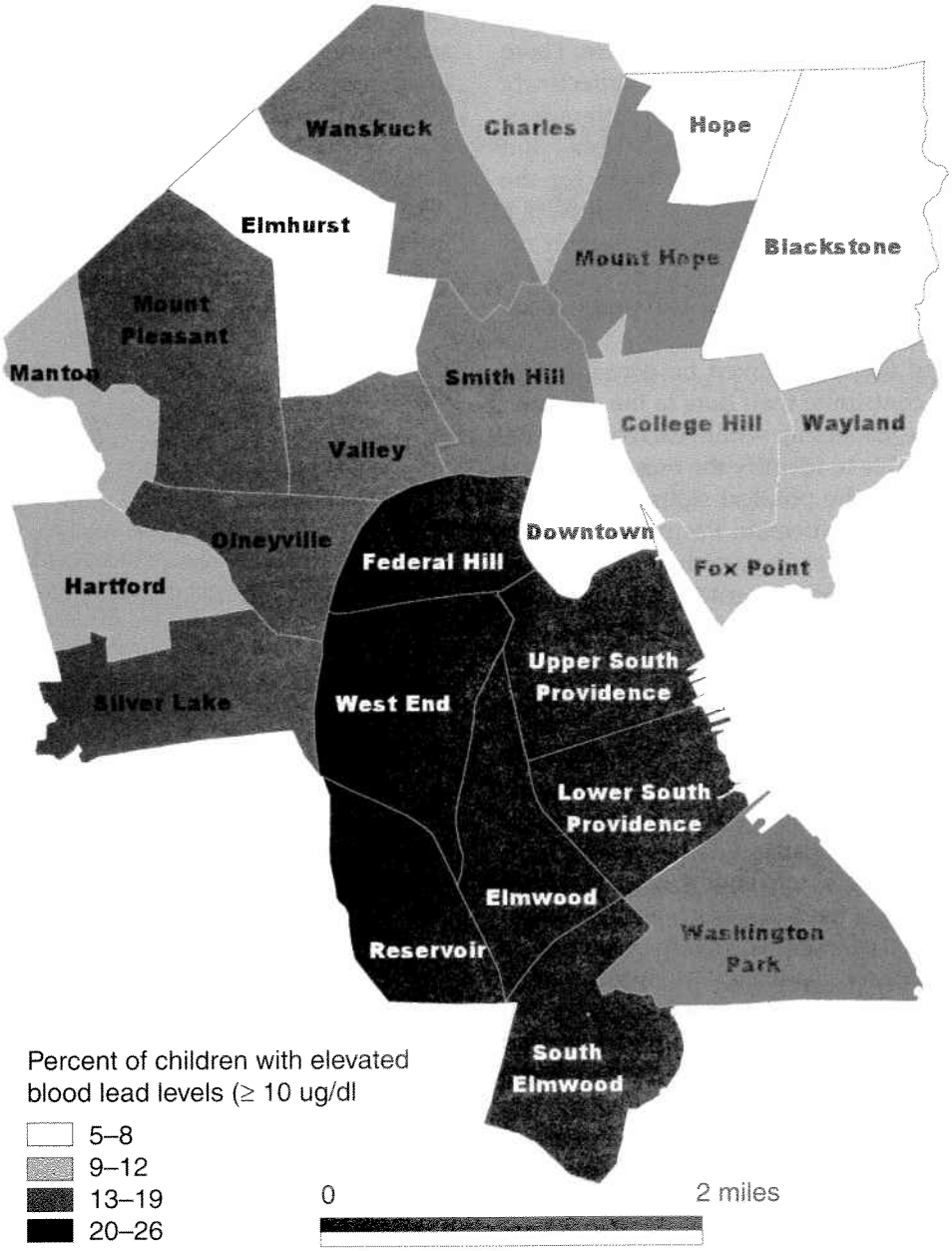

FIGURE 2. Children under age 6 with elevated blood lead levels in Providence in neighborhood, 2000. Source: Permission granted by The Providence Plan. Data from the Rhode Island Department of Health; analysis prepared by The Providence Plan, Providence, RI.

databases at relatively low cost. In the earliest stages of the project, processing and merging data were time-consuming and costly tasks. Few involved anticipated how quickly technology would improve, making local data analysis more feasible. The increased availability and affordability of powerful computer hardware and the development of user-friendly software for geocoding data have given NNIP partners the potential to establish databases relatively easily and efficiently. All the NNIP partners have built advanced geographic information systems (GIS) with integrated, recurrently updated information on neighborhood conditions in their cities. Such capacity did not exist in any U.S. city a decade ago, but was made possible by progress in the computerization of administrative records and the availability of inexpensive software that can aggregate and map such data for small geographic areas, such as blocks or census tracts.

A third lesson is that technological progress does not overcome political and institutional barriers. Con-

sequently, the organizational structure and leadership of the partner are important factors in its success. There are various types of organizations that can effectively serve as the local partner, including universities, government agencies, community foundations, and freestanding nonprofit organizations formed for the purpose of fostering community change. Along with a mission for community improvement, the partner organization also must have the staff capability to work with community groups and to maintain and use sophisticated databases.

Since holders of local data must be convinced to participate and to contribute their data to the common data warehouse, the leadership within each partner organization must be able to identify the most important data sources and have the political skills to persuade the relevant agencies to participate. Partners have used a variety of approaches to elicit participation, most often using a collegial encouragement to share information and expertise. Sometimes community partners have approached line staff, those who actually collect or work with the data. Often, however, line staff cannot release data without prior institutional approval, so agency heads must be convinced of the utility of sharing data. Rarely, cooperation has been impossible to obtain without other techniques, such as Freedom of Information Act (FOIA) requests. Often, a mix of techniques has been used to obtain data from all desired sources. Once data have been obtained, partners must work to keep the trust of those who share and use their data, through rigorously checking and cleaning data, maintaining strict protocols to protect confidentiality, and guiding users to avoid misapplications and misinterpretation. Some partners have created "data providers committees" across agencies to give agency personnel a forum to contribute to the process and a sense of ownership of the outcome. Prominent local people, such as the mayor or local civic leaders, may be included to promote a citywide consensus on data sharing.

Finally, a major lesson from the NNIP experience is that data availability is only a first step. There are many remaining challenges to using indicators to foster community change. The data must be communicated to local neighborhoods so that neighborhood leaders with no statistical training can use them to identify problems and develop approaches to improving their neighborhoods. The data must be used in ways that are visible, useful, and responsive to the community if the project is to retain local support and enthusiasm.

In conclusion, the NNIP provides a framework for addressing neighborhood-level health concerns by integrating health indicators with other data for small areas such as census tracts or health districts. As such, the NNIP also provides a model for other local jurisdictions to adopt, if they want to integrate their health data with other important community-level data sets in order to identify community health problems and work with local community groups to address these problems.

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