

Health Impact Assessment in San Francisco: Incorporating the Social Determinants of Health into Environmental Planning

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(Received February 2006; revised August 2006, December 2006)

ABSTRACT *The social determinants of health refer to social, economic and environmental factors that influence well-being including economic inequality, residential segregation, sub-standard housing, lack of supermarkets, schools, transit and open-space, and disruptions to family and social networks. This paper asks whether and how the practice of health impact assessment (HIA) can integrate the social and physical determinants of health into planning processes, overcome institutional and analytic barriers for health analyses in environmental impact assessment, and offer a new model for healthy urban planning. This is done by examining how a municipal health agency, the San Francisco Department of Public Health, utilized HIA to conduct health analyses of development projects, collaborate with other city agencies and community groups, and initiate a multi-stakeholder prescriptive HIA all aimed at integrating health into environmental planning practices. This case is important because the San Francisco DPH is the first city agency in the US to experiment with using HIA that aims to capture the physical and social environmental health impacts of projects and plans. The paper finds that HIA can inject the social determinants of health into planning when public agencies embrace an expanded definition of environmental health, organize health advocacy networks within and outside government, and generate a broad scientific evidence base to substantiate policy change.*

Introduction

In the US, life expectancy and disease rates vary by neighborhood within the same urban area (Kawachi & Berkman, 2003). Disparities in health status mirror, to a large degree, the quality of the built, social and economic environments within neighborhoods (Fitzpatrick & LaGory, 2000). Thus, the poor and people of color bear a disproportionate burden of disease and early death caused largely by

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avoidable place-based *social determinants of health* (Wilkinson & Marmot, 2003). Recognizing that planning processes fundamentally affect these determinants of health, a movement in the US and Europe is working to re-integrate city planning and public health (Duhl & Sanchez, 1999; Barton & Tsourou, 2000; Corburn, 2004). This movement aims to ensure that planning processes, including those related to land use, housing, transportation and urban design, consider the broad scope of environmental, economic and social factors that contribute to well-being or harm human health (Frumkin, 2005).

In the US, the environmental impact assessment (EIA) process was originally intended to serve this function by comprehensively analyzing impacts “to the environment and biosphere and stimulate the health and welfare of man” (Sec. 2, 42 USC §4321). However, EIA practice evolved much more narrowly and does not typically consider the human health effects of environmental factors such as residential crowding, automobile dependence and social segregation (Steinemann, 2000).

Health Impact Assessment (HIA) is an evolving practice, now widely used in Europe, Canada and Australia to evaluate the social, economic and environmental impacts of plans, projects and programs for the purpose of promoting population health (Kemmer *et al.*, 2004). However, in the US the practice of HIA is new and largely untested in city planning (Cole *et al.*, 2005; Dannenberg *et al.*, 2006). This paper asks whether and how the practice of HIA in the US can integrate the social determinants of health into planning processes, overcome institutional and analytic barriers for considering health within environmental impact assessment, and offer a new model for healthy urban planning? This question is explored through a case study of the use of HIA by the San Francisco Department of Public Health (SFDPH), Environmental Health Section (EHS).

The EHS has used HIA within the EIA process to analyze the impacts of planning proposals and development projects. The EHS has also applied HIA outside of EIA through a process called the Eastern Neighborhoods Community Health Impact Assessment (ENCHIA), a multi-stakeholder, consensus building process analyzing the positive and negative health impacts of rezoning proposals for the Mission, Potrero Hill and South of Market neighborhoods of San Francisco. While this paper looks in depth at the development of health assessment in San Francisco from both within EIA and as a broader, independent practice, the lessons from this case can be generalized to other cities that are, like San Francisco, struggling to constrain unchecked development, rising housing costs, the loss of well-paid jobs, and declining health of immigrant, Latino and African American populations. Since, the case study also explores the political conditions, opportunities and barriers for integrating HIA into EIA, the analyses also offer lessons for integrating public health into environmental planning practice. It is concluded that HIA in the US faces significant barriers for integrating the social determinants of health into EIA and transforming planning more generally to consider human health. However, HIA holds the potential to inject health into planning when: (a) public agencies embrace an expanded definition of environmental health; (b) new health advocacy networks are organized within and outside government; (c) a learning-by-doing approach is used, and; (d) a broad scientific evidence base is generated to substantiate policy change.

Research Methods

In order to answer whether and how HIA can integrate the social determinants of health into planning processes, overcome institutional and analytic barriers to entry presented by environmental impact assessment, and offer an alternative model for healthy urban planning, a set of mixed case-study methods were used over four years of research. First, key participants in the environmental planning episodes analyzed here were informally interviewed on multiple occasions.¹ Both authors were participant-observers at numerous meetings within the health agency, between the health and planning agencies, among community-groups and city agencies, and at community meetings of the ENCHIA. Internal memos and original documents within the Department of Health, including research reports, written testimony and email exchanges, together with popular media articles, were also reviewed in order to help situate the interviews and observations within their larger social, political and institutional contexts (Clarke, 2005).

In order to evaluate participants' perspective of the ENCHIA process, the methods mentioned above were used in addition to an open-ended telephone interview protocol.² One author (JC) contacted all 42 members of the ENCHIA Council twice over a 12-month period, with a 45% (19/42) response rate for the first round and a 55% (23/42) response rate for the second. The open-ended questions were used to spur interviewee reflections on the process, not single responses. Thus, each interview resulted in a narrative transcript that was qualitatively analyzed in order to identify consistent themes and common responses. Respondents represented seven different city agencies, four small business owners and 15 non-governmental organizations.

Background on Planning and Environmental Health

The concern with how place characteristics influence human health is not new to public health or city planning. In the 1800s, Edwin Chadwick and Friedrich Engels published reports in England documenting that the 'gentry and professional' classes lived longer than 'laborers and artisans', and each noted that mortality was distributed according to the social and physical composition of different residential districts (Rosen, 1993). These reports were some of the first to explicitly show that health, far from being fixed by characteristics acquired at birth or determined solely by access to medical care, bears the imprint of place-based economic and built-environment inequalities.

In the US, the Sanitary Era in the late 19th century saw engineers, city planners and public health practitioners promote place-based reforms intended to improve environmental health, including passing new building codes, constructing water and sewage systems, paving street-beds, and organizing regular refuse removal (Duffy, 1990). Progressive Era reformers built urban parks, playgrounds and public baths, and advocated for housing and other services to improve the well-being of the urban poor and immigrants (Schultz & McShane, 1978). By the 1920s, American cities adopted zoning ordinances that built on nuisance laws used to protect public health by limiting odors, smoke, fumes, noises and other noxious emissions from urban industries (Fishman, 2000). Despite the explicit population health aims of early

planning, policies for zoning, public housing, urban renewal and highway construction during the post-war period acted to physically fracture inner-city neighborhoods, adversely impacting health by displacing residents and severing health promoting social ties (Fullilove, 2004).

Environmental Review and Public Health in the United States

The National Environmental Policy Act (NEPA) of 1969 grew out of public concern that government projects and policies were damaging the environment and human health (CEQ, 1997a) and aimed to prevent damage “to the environment and biosphere and stimulate the health and welfare of man” (Sec. 2, 42 USC §4321). The federal statute gave rise to ‘little NEPAs’ in 16 states, including California (Foster, 1999, p. 285). The California Environmental Quality Act (CEQA) mandates that the EIA process analyzes “environmental effects of a project [that] will cause substantial adverse effects on human beings, either directly or indirectly” (California Code of Regulations, §15065). While NEPA requires agencies to consider and disclose environmental impacts, CEQA contains a mandate that public agencies refrain from approving projects with significant environmental impacts if there are feasible alternatives or mitigation measures that can lessen or avoid those impacts (CEQA, 1998).³ However, NEPA and CEQA both require a determination over whether a proposed action may *potentially* impact the quality of the human environment, give broad latitude to agencies to determine thresholds of ‘significance’, and mandate that analyses include direct, indirect and cumulative impacts.

While NEPA directed the Council on Environmental Quality (CEQ) to issue guidance for analyzing environmental impacts and CEQ’s, *Guidance for Analyzing Environmental Justice in NEPA*, directed analysts to consider “ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment” (CEQ, 1997b, p. 4), no federal agency has issued detailed guidance for human health analyses within EIA (CEQ, 1997b). Furthermore, neither specific methods nor details over what cultural, health, economic and social impacts to consider are offered in the CEQ guidance. One result is that EIA has evolved into a fairly routinized ‘screening, scoping, drafting, and reporting’ process that is rarely responsive to the needs or issues arising in a particular situation or context (Karkkainen, 2002).

Contemporary environmental planning processes in the US have tended to evaluate human health impacts relative to existing regulatory thresholds (i.e. air pollution regulations) or, occasionally, via the conduct of a quantitative risk assessment (Steinemann, 2000). However, regulatory thresholds of single pollutants are not always protective of human health and almost no environmental laws mandate that the cumulative impacts of multiple pollutants in a geographic area be considered simultaneously (Morello-Frosch *et al.*, 2000). While in principle quantitative risk assessment can be applied to assess the health consequences of any environmental hazard, it has focused almost exclusively on carcinogenesis from exposure to a single toxin. Risk assessment has also been widely criticized for overlooking chronic diseases, cumulative toxic exposures, and the combinations of chemical, physical, and social hazards that more accurately characterize actual

human exposures (Kuehn, 1996). Further, Steinemann (2000, pp. 632–633) notes in a study of 42 environmental impact statements selected because of likely human health impacts: 62% (26/42) contained no mention of a health impact; 38% (16/42) mention health impacts but provided no analysis, and 17% (7/42) focused on risks of cancer due to exposure to toxic and radioactive chemicals.

Characterizing HIA

HIA practitioners have defined the practice as a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential positive or negative effects on the health of a population (Lehto & Ritsatakis, 1999). There is no common set of methods or approach for analyzing these impacts, but the typical HIA follows the screening, scoping, analysis and mitigation development process commonly used in EIA (WHO, 1999). However, the analytic *content* of HIA can differ significantly from that of EIA, as the former aims to evaluate how changes to the natural and built environments, social and cultural relations, and socio-economic conditions may enhance or harm the health of populations using both quantitative and qualitative data (Kemmer, 2005).

One strand of HIA emerged in 1983 after the World Health Organization (WHO) published procedures for analyzing the positive health impacts of water and sanitation projects in developing countries (Birley, 1995). In Canada, another strand of HIA emerged in the 1980s analyzing the positive and negative human health impacts of non-health-related public policies, and a national health guide for environmental assessment was created (Milio, 1986). In the UK, the Manchester airport second runway project in the early 1990s stimulated a series of efforts aimed at capturing the social and human health impacts of projects, with the Merseyside Guidelines for Health Impact Assessment setting early precedent (Scott-Samuel *et al.*, 1998).

Since HIA is still emerging and there is no one common approach, evaluating the efficacy of HIA is difficult. However, a review of 88 HIAs performed between 1996 and 2004, in Europe, Asia, Africa and North America, varying in scale from the local to supranational, found that HIAs successfully influenced policy when key decision makers were involved in the design and conduct of analyses, an institutional commitment to HIA existed, and the policy process included a statutory framework for HIA (Davenport *et al.*, 2005).

Comparing HIA and EIA in the United States

A crucial difference between HIA and EIA in the US is that the former does not have statutory authority or legal standing, unless the HIA is integrated into an environmental impact statement. Thus, health analyses performed outside of formal EIA may not be considered as seriously by decision makers. A key challenge for environmental planners is determining the degree to which HIA ought to be integrated into EIA.

While including at least some components of an HIA within formal environmental assessments may ensure the findings have greater legal standing, there are drawbacks to subsuming HIA within EIA. For example, an EIA tends to occur after proponents

have made key project design decisions and secured political support, making it unlikely that findings from health analyses conducted within this process will have any significant influence. However, HIAs performed outside of EIA can occur at any stage in the policy and design process and potentially early enough to shape project alternatives (Kemm, 2005). In addition, most NEPA and state environmental analyses are triggered only when federal or state funding is involved, thereby missing many 'as-of-right' neighborhood-scale development projects that can have a significant impact on the health of local populations. In contrast, an HIA can be applied to a range of projects and policies at various scales. When HIA is performed outside of the legal shadow of NEPA, analysts may be more inclined to use interdisciplinary and experimental methods to consider the range of social and economic impacts that are regularly ignored in EIA (or relegated to separate social impact analysis processes). For example, HIAs in Europe have tended to not only analyze impacts, but simultaneously use health as an organizing principle to integrate behavioral, social, economic and environmental considerations into more inclusive public decision making (London Health Observatory, 2002).

Finally, while NEPA contains a legal requirement for community participation, such as regular public hearings and comment periods, participation is often modeled around a decide-announce-defend model where expert agencies and their consultants generate analyses, announce findings in a draft document, and defend their analytic choices in the face of oral and written comment periods (Innes, 1996; Petts, 1999). Impact assessment processes not burdened by EIA's legal precedents mandating strict procedural steps can choose to employ more inclusive and deliberative participatory planning methods (Karkkainen, 2002). While these choices and opportunities exist in theory, there is little empirical work testing the potential of HIA in US planning practice.

Building HIA into Environmental Planning in San Francisco

Until the mid-1990s, the EHS of the SFDPH was a typical environmental health bureaucracy mandated to enforce environmental and sanitary regulations through surveillance and sanctions. The EHS analyzed and regulated chemicals, enforced violations of regulatory standards and relied on quantitative tools, such as risk assessment, to evaluate whether a single hazard resulting from new urban policies was likely to have deleterious effects on human health.

In 1994, environmental justice (EJ) organizations in the Bayview/Hunters Point neighborhoods confronted the DPH demanding that the agency respond to community claims of disproportionate pollution burdens and resulting adverse health effects on the local, largely African American, population. Confounded over exactly how to respond, SFDPH convened a community research partnership with EJ groups and academic scientists in order to explore and document the environmental health burdens in Bayview/Hunters Point (Bhatia, 2003).

By 1999, the research partnership had conducted a household survey illustrating that priority environmental health issues for residents included not only pollution, but also substandard housing conditions, unemployment, lack of access to healthy food, and safety/crime. This finding helped the EHS leadership realize that local EJ

claims were a series of interrelated demands for economic justice, health and safety, and community integration (Bhatia, 2003). The agency was forced to consider

both the direct pathological effects of chemicals, radiation and some biological agents, and the effects (often indirect) on health and well-being of the broad physical, psychological, social and aesthetic environment which includes housing, urban development, land use and transport. (WHO, 1989)

or what the World Health Organization calls the 'social determinants of health' (Wilkinson & Marmot, 2003).

As a result of the partnership, the EHS engaged with non-health specific city policies and programs, performing a health impact assessment of a living wage ordinance proposed by the San Francisco City Council (Bhatia & Katz, 2001). This study was the first in the US to determine the societal health benefits from a living wage policy and helped build the research and technical capacity within the EHS to perform HIAs. It also spurred the establishment of the *Program on Health, Equity and Sustainability* within the SFDPH⁴ which has the mission of improving population health by addressing the environmental, social, and economic conditions under which San Francisco residents live and work (SFDPH, 2005).

Housing, Health and Environmental Review

While the EHS was slowly expanding its mission and definition of environmental health, social justice groups were organizing to influence the city's rapid approval of local development projects. The 'dotcom' high-tech boom of the 1990s was rapidly gentrifying many of San Francisco's neighborhoods, and community groups were scrambling to stop the loss of affordable housing and locally-owned businesses (Seligman, 1998). One coalition of community groups, the Mission Anti-displacement Coalition (MAC), brought international attention to San Francisco's housing and land-use controversies by staging public protests and using civil disobedience to physically block construction projects in the Mission District, a neighborhood with San Francisco's largest population of Latinos and a historical landing point for new immigrants (Epstein, 1999; Feldman, 2000). Recognizing that land use and housing decisions were central to control and stewardship over the fate of their neighborhood, social justice organizations framed their participation and their objectives as matters of environmental health justice.

In 2003, the City Planning Department made a determination that the redevelopment of the Trinity Plaza apartments, a building with over 360 rent-controlled units, would have no adverse environmental impact. The Trinity Plaza redevelopment plan called for the eviction of existing tenants, demolition of the building, and construction of 1400 market-rate condominium units. During a public hearing announcing the no impact determination, local residents including members of MAC, challenged the city's position, arguing that the displacement of residents, particularly low-income families, and the net loss of *affordable* housing units, were both significant impacts (Grande, 2005).

The EHS supported the residents' position and issued a comment letter to the City Planning Department detailing the known human health effects from housing

demolition and displacement (SFDPH, 2004a). The letter was based on a research report that used evidence from both local experience with environmental housing conditions and the peer-reviewed public health and housing literatures that documented how residential displacement severed health-promoting social networks and health-supportive family relationships and that these social ties were crucial resources for physical and mental health. After reviewing the evidence offered by the EHS, city planning officials acknowledged that CEQA did require that an environmental review should include any likely health impact resulting from the demolition, and revised their original determination (Bhatia, 2005). While convinced that residential displacement could impact health adversely, the Department of City Planning (DCP) challenged the EHS to demonstrate how these adverse consequences could be predicted quantitatively for a particular project and population (Chion, 2005).

Analyzing Social and Physical Environments

The request for quantitative and proven methodologies by the DCP was part of a more general challenge by the agency questioning whether human health impacts, especially those associated with social, economic and political determinants of health, ought to be part of the CEQA process. Until the Trinity case human health impact analyses outside of those from physical and chemical hazards were not a component of environmental reviews in San Francisco. According to Rajiv Bhatia, Director of the EHS, the health agency suggested to the DCP that guidance documents under CEQA gave local agencies considerable latitude to develop specific “objectives, criteria, and procedures for the evaluation of projects” and that California law allowed for determinations of significant impact to be made using “qualitative or quantitative data that reference health goals, service capacity standards, ecological tolerance standards, a city’s general plan, or any other standard based on environmental quality” (CEQA, 1998). Ultimately, the planning department forced the developers of Trinity Plaza to include an analysis of residential displacement and its adverse impacts on health in a revised environmental review and the developer, facing community opposition and rising financial costs due to project delays, modified the final project to include a guarantee that all existing tenants could remain in the new building in rent-controlled units (Goodyear, 2005).

Soon after the Trinity case, the City Planning agency asked the DPH to review the Environmental Impact Statement (EIS) of a proposed condominium development in the Rincon Hill area south of downtown. A major part of the Rincon Hill Plan was the development of the Spear and Folsom Towers, which consisted of 1600 residential units in two 35-story and two 40-story buildings on an underutilized parcel of land. City planning staff asked the DPH to help them demonstrate the social value of affordable housing and public infrastructure benefits, in part because the planning agency was considering a new public benefits zoning program. The EHS analysis, again in the form of a letter summarizing possible impacts with supporting evidence from the health literature, focused on the fact that the relatively high price of the new condominiums meant that they would only be affordable to a limited number of existing downtown employees. The EHS emphasized that the project was

likely to exacerbate the jobs-housing ‘spatial mismatch’, or the notion that the incomes offered by existing downtown jobs were insufficient to afford a home in the new Rincon Area development. The EHS also stressed that the developer planned to meet their housing affordability requirement (12% of total units by city law) by building these units in a low-income neighborhood miles away from the proposed project. The EHS stated that both the jobs-housing spatial mismatch and residential segregation could have adverse human health impacts because they denied low and moderate income families the social, economic, and physical benefits that come with new housing (SFDPH, 2004b).

In this case, the health department’s findings did not persuade the Planning Commission to amend the environmental analysis and the Commission approved the final environmental review and the project. However, the research by the EHS was shared with members of the City’s Board of Supervisors and they used the findings to require the developer to increase the proportion of below market rate units in the Rincon Hill project to 17.5% from 12% and construct all the below-market-rate housing either on-site or within the local planning district (Brahinsky, 2005). In addition, a community group, South of Market Community Action Network (SOMCAN), used data produced by the EHS showing that the Rincon Hill project would severely strain local infrastructure to demand that the City Supervisors require the developer to pay an impact fee to be used for open space, transit and other community benefits for the entire planning area (Veneracion, 2005). Facing pressure from legislators and community groups, the developers agreed to pay a \$25 per square foot impact fee that was used to create a \$20 million SOMA *Community Stabilization Fund* for local social and physical infrastructure needs (Vega, 2005).

Opportunities and Obstacles for Integrating HIA into EIA

These vignettes suggest that incorporating components of HIA into EIA on a project-by project basis is sometimes possible within the existing structure of CEQA. The evidence offered by the health analyses helped open-up project decisions to new public scrutiny. Community groups and elected officials leveraged evidence from the HIAs to alter development according to their conception of community needs.

Importantly, the demand for and political support of HIA came from activists in Bayview, the Mission and SOMA. Community organizations formed a health advocacy coalition that worked to hold the EHS accountable for studying the social determinants of health and encouraged the agency to institutionalize their commitment to social justice, reflected in the establishment of the *Program on Health, Equity and Sustainability*. In turn, the EHS broke the public health agency’s historic silence over environmental planning and land use issues by developing internal research capacity to conduct HIAs and offered evidence even in the face of an obstinate planning bureaucracy.

However, political support, institutional commitment from the health agency, and technical capacity, were not enough in these examples to ensure that health is systematically and routinely considered in future EIAs or policy-making processes more generally. Neither the Trinity nor Rincon Hill examples led the planning agency to mandate that similar health analyses occur as a regular component of EIA practice, and the Trinity Plaza case is the only example where the DCP required

a developer to revise their project based on a social determinant of health. By remaining an ad hoc tool, HIA is unlikely to fundamentally alter EIA practice in the future.

Institutionalization of health determinant analyses within EIA is more likely to occur through a combination of new practice, case law and regulatory guidance. Further, it is unlikely that the political conditions that made these examples a success—including a public bureaucracy responsive to community concerns, comfortable taking political risks, and willing to take a learning-by-doing approach to a new practice—will be present in many other municipalities. Successfully integrating HIA into EIA outside of San Francisco may also be difficult because, as these examples suggest, environmental planners may need to simultaneously understand and adopt a new, social orientation to environmental health, organize and sustain networks of support for HIA within and outside public agencies, and learn new methods of analysis. Planners may also be constrained by a lack of analytic experience with the broad evidence base demanded by HIA, including economic and social data from outside traditional environmental disciplines, and methods for integrating these data with the expertise and local knowledge of community members (Corburn, 2005).

HIA and Planning Practice

Given the limits of EIA and the barriers HIA faces for changing this institutionalized practice, the authors asked whether an independent HIA might offer a novel model for healthy urban planning. Aiming to build on the lessons of the Trinity and Rincon Hill cases and integrate the social determinants of health prospectively, rather than reactively, the MAC, SFDPH and DCP met in January 2004 to discuss whether an HIA sponsored by the planning department could be conducted to evaluate a draft rezoning plan for the Eastern Neighborhoods of San Francisco (Bhatia, 2005). Rajiv Bhatia, Director of the EHS, recalled that in the meeting Paul Maltzer, Director of Environmental Review for the DCP, acknowledged that human health was a goal of CEQA and that many community groups were supportive of the HIA concept. However, Maltzer rejected the argument that the requirement for human health analysis in CEQA included potential impacts on such social determinants of health as housing affordability, displacement, and social cohesion. Maltzer was also candid about the political obstacles to broadening the scope of the CEQA analysis. He acknowledged that any additions to the analysis would probably be challenged politically and legally by development interests. He stated emphatically that he would not initiate such changes in CEQA practices unless directed to do so by the city leaders (Bhatia, 2005).

As an alternative course of action, the group decided that the SFDPH could conduct an HIA of the Eastern Neighborhoods Rezoning Plans outside of, but parallel to, a community planning process and its formal environmental review. This approach had the advantages of allowing community members and agencies to collaboratively shape the structure, content and participants for the HIA and for the health analyses to occur at an early stage in the rezoning process. While the MAC agreed with the approach, they were concerned that the HIA would not have the legal force of an EIA (Grande, 2005). The coalition sought, but failed, to get

assurance from city planning that the EIA would either contain an analysis of community issues or that the HIA results would be incorporated later as a component of the CEQA analyses. Despite the uncertain outcome of the process and the questions raised by MAC, the EHS agreed to design a community-based health impact assessment process collaboratively with the planning department and community groups.

The Eastern Neighborhoods Community HIA

Before designing the HIA, the EHS explored successful models of democratic participatory processes dealing with complex scientific and social justice issues, such as the Merseyside Model for Health Impact Assessment, Danish Consensus Conferences and Science Shops used in Europe (Scott-Samuel *et al.*, 1998; Wachelder, 2003; Fischer *et al.*, 2004). These processes represented models of public engagement with science policy where lay people and experts had equal opportunity to frame research questions, offer qualitative and quantitative evidence, and collaboratively review and interpret results in order to make policy recommendations. The EHS learned from these practices that meaningful public engagement can improve the political legitimacy of and scientific evidence behind analyses, and the agency aimed to design a process with these objectives (Bhatia, 2005). EHS staff also met with about 40 interest groups and private organizations to gain input into the proposed HIA process. Ultimately, the Eastern Neighborhoods Community HIA (ENCHIA) was created, and the partners agreed that stakeholders representing a range of interests would be invited to a facilitated, year-long public process that would collectively define the goals and priorities of a healthy neighborhood, consider both positive and negative impacts of the zoning proposals, and where appropriate, develop a set of alternative land use/zoning recommendations. A planning committee drafted a process map that outlined the steps and estimated timeline for assessment preparation, the stages within the assessment itself, and the estimated dissemination and evaluation steps (Figure 1).

On 17 November 2004, over 30 different non-profit and private sector organizations and four public agencies in addition to city planning and public health, joined the Community Council of the ENCHIA and attended the first meeting. The meeting focused on stakeholders getting to know one another, a review of how a consensus building process works, and a group visioning exercise where participants brainstormed about the elements of a healthy neighborhood. The early objective of the HIA process was to have a community dialogue about the elements of a healthy place, how land use does or does not influence these elements, and how the rezoning proposals might influence these elements in a positive or negative way. Meeting agendas, summaries, presentations and a range of supporting documentation were regularly posted and available to the public on the project website, www.sfdph.org/phes/enchia.htm.

Evaluating the ENCHIA

Since the ENCHIA process is still ongoing, outcome evaluations are premature. However, two participant evaluations were performed, one at the six-month point

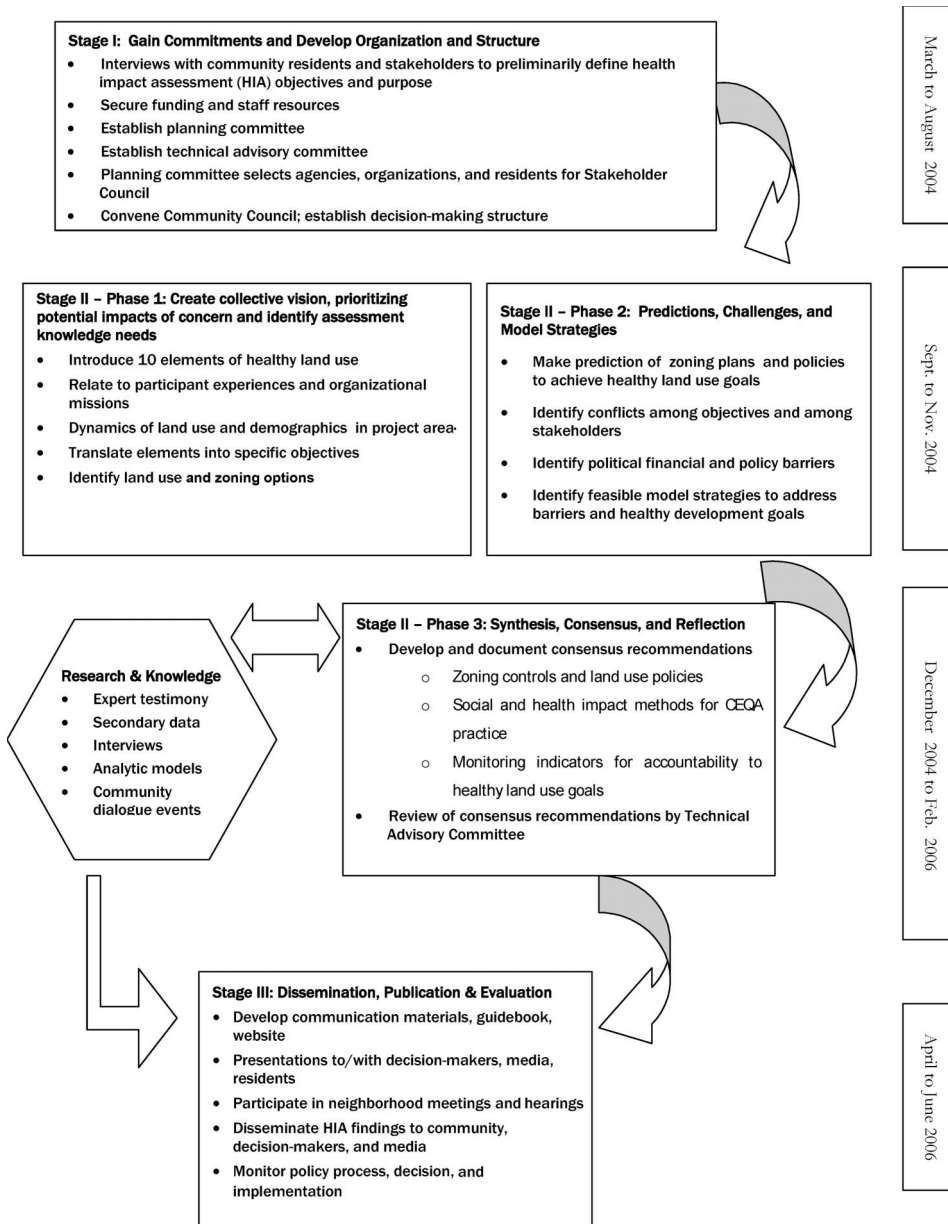


Figure 1. ENCHIA process map. Source: SFDPH, www.sfdph.org/eh/phes.

(May 2005) and another after the first year (November 2005). Forty-two ENCHIA participants were contacted by telephone and asked to answer a series of open-ended questions about the process, substantive content and outcomes.⁵ Interview responses were transcribed and analyzed quantitatively for common themes and qualitatively

for common narratives. A select set of interviewee responses are offered here to highlight some of the opportunities and challenges facing the ENCHIA.

The first question asked participants to describe, in the ideal, what changes in land use, zoning or other policies would make the Eastern Neighborhoods more healthy? Sixty-eight per cent (13/19) of respondents from the first round of interviews stated that new, affordable housing, small businesses, open space, schools, homeless/transitional housing, and community center space should be part of a 'healthy' rezoning proposal. Fifty-eight per cent (11/19) thought new urban designs, such as sidewalk and streetscape improvements, bicycle lanes and building bulk and density requirements, should be part of a healthy rezoning proposal. Fifty-two per cent (10/19) stated that new, more inclusive planning processes where local people had more control over land use outcomes ought to be part of any new policies.

It was also asked whether and how the ENCHIA process was having an impact on participants' other professional work and relationships. Eighty-seven per cent (20/23) of respondents from the second round of evaluation interviews stated that the ENCHIA was having an influence on their professional work and networks, stating that the process had exposed them to new ways of framing their work around public health and accessing data they did not know existed. One participant noted the impact the process has had on their thinking, stating: "If you asked me five years ago what is needed for a healthy neighborhood, I would have said safe streets, after-school programs, maybe air pollution, but this process has made me aware that the key issue is housing". Eighty-three per cent (19/23) of respondents from the second set of interviews stated that the ENCHIA had extended their professional and personal networks by introducing them to new allies that, absent the monthly meetings, they would not have connected with. One respondent noted: "I see a lot of these same people at other meetings, but now I'm more likely to go talk with them or try and work with them now that I know them better". Another stated: "My relationships with the DPH have improved through this process. I trust them more and they [DPH] have helped us work better with other city agencies".⁶ One council member who directs a community development organization stated:

Before the ENCHIA we never attempted to make community economic development and housing affordability a public health issue. Yet, we always talked about our work as defending 'human needs' and 'basic living conditions'. The ENCHIA has helped us see that we were making public health arguments all along, but just not being explicit about it. Now, by making explicit the connections of our work with health, we have not only seen that Supervisors and other elected officials are paying more attention but it has also helped us expand our organizing base in the neighborhood.

Another ENCHIA council member echoed these sentiments, reflecting on the political power that can come by aligning planning with public health:

The ENCHIA process has revealed to our organization that when a public health agency says 'displacement or this land use may cause a health problem,

don't do that,' the government and the public are more likely to listen than when planners say the same thing.

Yet, only 61% (16/23) of those interviewed for the second round evaluation stated that the process was effectively envisioning the broad goals of the 'healthy neighborhood' and suggested that it could be doing a better job investigating potential health impacts from the rezoning proposals. One respondent noted: "The process is amorphous and I'm not sure where it is going month-to-month nor what the end-product will be". Another was skeptical the process would ultimately influence the rezoning proposals at all, noting: "I'm not sure how this process will impact the EIA, which is already hijacked by city planning and private developers".

As mentioned above, outcome analyses are preliminary since the process is still continuing. However, a select set of draft outcomes are mentioned to highlight the types of outputs expected from ENCHIA. First, HIA participants have gathered a set of social, environmental, economic, land use and public health data in one place, the EHS, and made these data easily available for public use. These data include information on the social determinants of health that had never been brought together in one place for easy analysis, including information on housing affordability and overcrowding, neighborhood walkability measures, open space per capita and access to goods and services, including supermarkets and healthcare facilities. ENCHIA members also helped to conduct a study and produce a report detailing the threats to health and safety for neighborhood youth, seniors, day laborers and domestic workers—populations often ignored in epidemiologic studies. Third, the group has drafted a 'healthy development measurement tool,' an analytic method outlining the broad social indicators, land use development goals, and quantitative and qualitative data that ENCHIA participants identified as necessary for moving toward 22 healthy neighborhood objectives they outlined in their original visioning session. Finally, the ENCHIA has produced 27 policy briefs analyzing the positive and negative health impacts of legislation that could impact the well-being of neighborhood residents, from expanding the city's inclusionary housing ordinance, to developing food enterprise zones, to open space requirements in the zoning code. All of these draft outcomes are available on the projects' 'outcomes' web page for public review, http://www.sfdph.org/phes/enchia/enchia_products.htm.

ENCHIA and Transformative Planning

While the ENCHIA process is still on-going, these findings suggest that the process has the potential to influence policy, understood not just as legislative or administrative change, but also as how practice norms are taken up, used, entrusted in institutions of power and stabilized over time. From a procedural standpoint, the ENCHIA is providing a forum for citizens to meaningfully enter into and frame planning issues, something EIA public hearings regularly fail to do. Even while the final outcomes remain uncertain, the substantive recommendations that are emerging from ENCHIA will likely reflect a much broader political consensus than the Trinity and Rincon Hill HIAs developed by the EHS acting alone as an expert organization. These characteristics suggest that HIA outside of EIA, when

structured as an inclusive participatory process, can transform planning by generating new evidence with impacted stakeholders.

The ENCHIA may also be capable of transforming practice by integrating knowledge and expertise from a range of disciplines and life experiences. As the interviews suggest, this cross-disciplinary knowledge integration can be supported through the strengthening of organizational 'weak ties'.⁷ Yet, these characteristics do not guarantee HIA can or will offer a new model for healthy planning. Bureaucratic resistance, lack of detailed data on how social forces influence human health, and lack of a statutory authority may all limit the ultimate success of ENCHIA and the ability of health analyses to transform planning practice more generally.

Toward Healthy Environmental Planning

This paper has traced the emergence of health impact analysis and the political factors that have contributed to its success and limitations in San Francisco. The case illustrates that expanding the definition of the 'environment' and integrating public health into planning practice may require attention to more than just the analytic methods of HIA, but to the political work of coalition building, changing institutional practices and experimenting with new participatory processes. Since the final outcomes of the ENCHIA process are to be determined, it is premature to characterize this experiment as a success or failure. However, the ENCHIA is the first and only experiment the authors know of in the US using a community-based health impact assessment process to investigate and influence land use decision making in a large urban area, so ongoing critical investigation and analysis is warranted.

This case also highlights that some of the challenges for integrating city planning and public health may not be addressed by HIA. For example, the HIA processes examined here did not fundamentally alter the disciplinary boundaries between public health and city planning agencies. City planners were reluctant to consider social determinants of health as an 'environmental impact' and remained more comfortable with traditional definitions of environmental impacts. Further work is also needed to determine whether HIA is most effective when applied to site-specific developments or comprehensive planning efforts aimed at the 'healthy city'. The Trinity and Rincon Hill examples suggest that HIA can alter site-specific projects but will face significant resistance, while the ENCHIA process suggests that HIA may improve political networks and opportunities for public participation, but not transform planning in other crucial ways.

Further study is needed to explore how HIA processes might handle recurring conflicts over political power and health values, such as when a state or private-sector sponsored development project clashes with the health objectives of a local community. Yet, as has been shown here, HIA is like other planning processes where planners can exert discretionary power in the shaping of public agendas and attention, available evidence and norms of inquiry, inclusive or exclusive deliberations, and responses (or lack thereof) to bias, discrimination, inequality and a recalcitrant state. While there is no 'one-size fits all' approach to human health

analyses that can respond to all these issues, experiments with HIA, no matter how piecemeal or comprehensive, are important for building the political support, knowledge base and process design alternatives for linking environmental planning and public health.

Notes

- 1 Interviewees included the director of the Environmental Health Section, the former director of Community and Environmental Planning in the Department of City Planning, and members of non-governmental organizations such as: Asian Neighborhood Design, Mission Economic Development Association, Mission SRO Collaborative/Mission Agenda, Neighborhood Parks Council, People Organizing to Demand Environmental & Economic Rights (PODER), People Organized to Win Employment Rights (POWER), SF Land Trust, SF Food Alliance, Urban Habitat, and Urban Solutions.
- 2 The interview protocol was approved by the Institutional Review Board (IRB) of Columbia University. Corburn performed all interviews and analyzed the interview data. The evaluation was supported by a grant from the Robert Wood Johnson Foundation, Health and Society Scholars Program at Columbia University. See note 6 for interview questions.
- 3 See also *Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105.
- 4 According to the website of SFDPH (<http://www.sfdph.org/phes/phes.htm>), the mission of the Program on Health, Equity and Sustainability, is the following:

The Program on Health, Equity and Sustainability supports San Franciscans working together to advance urban health and social and environmental justice through ongoing integration of local government and community efforts and through valuing the needs, experiences, and knowledge of diverse San Francisco residents. We accomplish this by: Initiating and facilitating dialogue and collaboration among public agencies and community organizations; Expanding public understanding of the relationships between the natural, built, and social environments and human health; Support local participation in public policy-making; Conducting and supporting local and regional research; Developing and evaluating new methods for interdisciplinary and inclusive involvement in public-policy; Documenting and communicating our strategies. In our vision of San Francisco, communities are engaged in democracy and committed to equality and diversity. We believe this will create and maintain sustainable and healthy places for all San Franciscans to live, work, learn, and play.

- 5 In order to preserve confidentiality in an on-going public process, names of individuals and their organization affiliations are not included here. The interviews consisted of five open-ended questions, including: (1) What would be your optimal land use, zoning and/or public health changes for the Eastern Neighborhoods? (2) How, if at all, has the HIA process influenced the work of your organization? (3) How, if at all, has the HIA process influenced relationships you have with other stakeholder groups, the SFDPH, and/or other city agencies? (4) What aspects of the HIA process could be improved and can you offer specific recommendations for improving the process? (5) How, if at all, do you think the findings/outcomes from this process will influence the rezoning proposals and neighborhood planning more generally? Interviewees were also asked to provide any additional comments or thoughts about the process. Responses were recorded and analyzed for common themes.
- 6 The ENCHIA process has also stimulated new collaborations between the SFDPH and stakeholder groups. For example, the San Francisco Bike Coalition and Transportation for Livable Cities is collaborating with the EHS on an initiative to revise the use of vehicle Level of Service (LOS) analysis in project reviews. The SFDPH is helping the groups use health evidence to make the case that using automobile LOS as a performance measure leads to increased vehicle traffic and travel speeds, resulting in more air and noise pollution and jeopardizing the safety of pedestrians and cyclists.
- 7 Strengthening weak ties comes from Granovetter (1973), who found that when organizations are tightly coupled and interact frequently, ideas and information are recirculated through the network. However, interactions between organizations with weak ties, or those with few overlapping interests and infrequent contact, offer a greater possibility for new information to be passed between groups.

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