Making Decisions with Health in Mind: Steps Towards a Healthier Nation

Rajiv Bhatia, MD, MPH
San Francisco Department of Public Health
Our Nations Health: Distressing Facts

- One in six children in absolute poverty
- Life expectancy a full year less than peer-countries (30th place)
- Neighborhood to neighborhood differences in life-expectancy exceed ten years.
- Annual health care spending $6405 per person (1st place)
Is Poor Health A Failure of Policymakers to Attend to the Needs of Public Health?

- The fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity.

- Health promotion goes beyond health care. It puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health.

  - Ottawa Charter for Health Promotion (1986)
Is Public Health Engaged With Social Policy?

- Are decision makers aware of the health impacts of their decisions?
- Are public health institutions engaged in the policy process?
- Do our decision making institutions consider and protect health?
Good social decisions ...

- Maximize human and environmental well being
- Consider all available information and uncertainty
- Are farsighted
- Are inclusive
- Produce outcomes that are fair
- Are efficient, multi-objective
- Build on human strengths, diminish our weaknesses
- Allow for learning and adaptation
Understanding Sprawl

- Sprawl resulted from deliberate public policies and development theories
- Greenfield development promised healthy communities
- Sprawl resulted in air pollution, climate, noise, physical activity, injuries, transportation costs, and social exclusion
- What did we miss?
  - Environmental and health consequences
  - Requirements of Scale
  - Inequities
  - Cultural change
Poverty, Community Violence, and Poor Health

Urban Planning, Structural Inequality, Racism, and Health Inequities

Disinvestment, Middle Class Flight, Unemployment, Blight

Redlining

Neighborhood Life-Cycle Theories

Suburban Highway Investment

Benign Neglect

Urban Renewal

Rajiv Bhatia, MD, MPH
Denver Living Streets 2008
Why Consider Health?

- Prevents harm
- Provides a comprehensive lens on issues and trade-offs
- Supports community engagement
- Legitimizes “unheard” community voices
- Increases policy maker and public understanding of health needs
- Mobilizes political support for social change
- Helps societies learn
Known Public Health Impacts of the Built Environment

- Physical activity
- Pedestrian injuries
- Asthma and respiratory disease
- Obesity and chronic disease
- Crime and violence
- Social capital and cohesion
- Child psychosocial development
- Elder health and mobility
- Water quality and quantity
- Depression and isolation
- Health inequities
Drivers of Public Health Engagement in San Francisco Land Use Planning

- Environmental Health Issues in San Francisco: health inequities; air pollution; noise; displacement;

- Community demands for cumulative, social and health impact assessment

- Fragmentation of the work of public institutions
City Planning Codes are adopted “...to promote and protect the public health, safety, peace, morals, comfort, convenience and general welfare.”

The National Environmental Health Policy Act (NEPA) requires analysis health and safety problems caused physical changes.

National and State Environmental Justice Policy mandates agencies to identify and address adverse health effects on low income and minority populations.
Organized tenants challenged the demolition and redevelopment of 360 rent-controlled apartments citing human impacts

SFDPH comment on the EIA documented adverse health effects of on stress, social cohesion, and housing

Outcomes:
- City required study through EIA or mitigations
- Project redesigned to provide replacement housing at current rents
- City level planning policy changes for replacement housing
Infill Development & Job-Housing Balance

- City proposal for high density residential neighborhood adjacent to downtown
- Health Department comment on EIA documented impacts related to jobs-housing balance, segregation, and public infrastructure
- Outcomes:
  - Community groups used health data in advocacy
  - Negotiated agreement with developer augmented affordable housing and impact fees
  - Community oversight over community mitigation funds

- City proposed upzoning of historically industrial neighborhoods;
- EIR did not evaluate environmental impacts on residents from noise, air pollutants, traffic hazards, and limited infrastructure
- Health Dept worked with planners to analyze and mitigate impacts as “cooperating agency”
- EIA required new mitigations to protect respiratory health, reduce noise exposure and added “improvement measures” to reduce pedestrian injuries
Roadway Air Pollution Hot Spot Assessment for PM 2.5 Using Dispersion Modeling
Vehicle-Pedestrian Injury Collision Model: Eastern Neighborhoods Plans EIR Analysis

Predicted % change in pedestrian injury collisions based on estimated changes in resident population and traffic volume.
Integrating Health Concerns Within EIA in the Bay Area: Key Lessons

- Existing institutions like EIA were available and underutilized for accountability for health
- Policy makers were not usually aware and attentive to health impacts
- Health issues were complimentary with community needs and concerns
- Planners were receptive to a scientific approach along with practical solutions;
- Analysis helped foster planning ownership of public health objectives
- Could be a catalyst for new regulations and upstream design decisions
Limits of a Regulatory Approach

- Focus on physical attributes of planning
- Focus on negative / adverse impacts
- Technocratic
- Not conducive to inclusion
- Happen too late
- Not conducive to social learning
- Did not evaluate trade-offs
- Not a consensus building process
Eastern Neighborhoods Community Health Impact Assessment

- Collaborative, consensus-based health impact assessment to analyze how development in three SF neighborhoods affected health

- Facilitated by SFDPH & Guided by a Community Council Comprised of >20 organizations and government stakeholders

- 18-month process culminated in the development of the “Healthy Development Measurement Tool”
<table>
<thead>
<tr>
<th>Land Use and Zoning:</th>
<th>Sample Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Compatibility of land uses (e.g., industrial, residential, commercial, office, mixed-use)</td>
<td>- Toxic exposures</td>
</tr>
<tr>
<td>- Density</td>
<td>- Noise</td>
</tr>
<tr>
<td>- Height</td>
<td>- Safety</td>
</tr>
</tbody>
</table>

Sample Images:
Modeled Vehicle Source PM 2.5 Concentrations At Streets – Southeastern San Francisco, CA

Legend

PM2.5(ug/m3): Peak Hour Traffic
- 0.01 - 0.75
- 0.76 - 1.70
- 1.71 - 2.72
- 2.73 - 6.90
- 6.91 - 14.08

* Contribution Above Ambient Associated with Traffic
<table>
<thead>
<tr>
<th>Transportation Systems:</th>
<th>Sample Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars</td>
<td>Mobility</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>Injuries</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>Air quality</td>
</tr>
<tr>
<td>Public transit</td>
<td>Respiratory health</td>
</tr>
</tbody>
</table>
Pedestrian Injury Collision Number* by Census Tract
San Francisco, CA (2001-2005)

Number of Collisions
- 0 - 7
- 8 - 14
- 15 - 26
- 27 - 191
- Excluded (Treasure Island)

Major Highways/Freeways

source: California Highway Patrol Statewide Integrated Traffic Records System (SWITRS)
City and County of San Francisco Department of Public Health Environmental Health Section
Pedestrian Environmental Quality Index

The Index Summarizes Environmental Conditions Important to Pedestrian Quality:

- Traffic
- Street Design
- Land Use
- Intersection Safety
- Perceived Safety

PEQI

<table>
<thead>
<tr>
<th>PEQI</th>
<th>Extremely Poor</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 - 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 - 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 - 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>81 - 100</td>
<td></td>
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</tr>
</tbody>
</table>

**Land Use**
- Public
- Residential
- Residential, Mixed
- Residential-Commercial Combined
- Neighborhood Commercial
- Downtown Commercial
- Residential
- Commercial
- Industrial
- Redevelopment

Pedestrian Environmental Quality Index

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Rajiv Bhatia, MD, MPH
Denver Living Streets 2008
<table>
<thead>
<tr>
<th><strong>Community Design:</strong></th>
<th><strong>Sample Impacts:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic calming</td>
<td>Social cohesion</td>
</tr>
<tr>
<td>Street design</td>
<td>Violence</td>
</tr>
<tr>
<td>Site design</td>
<td>Walkability</td>
</tr>
<tr>
<td>Public amenities</td>
<td></td>
</tr>
</tbody>
</table>
Aggravated Assaults and Alcohol Outlets

San Francisco Aggravated Assaults Oct-Dec 2004

Density of Take-out Alcohol Outlets

Source: California Department of Alcoholic Beverage Control (2007)
<table>
<thead>
<tr>
<th>Housing:</th>
<th>Sample Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>Stress</td>
</tr>
<tr>
<td>Design</td>
<td>Toxic exposures</td>
</tr>
<tr>
<td>Location</td>
<td>Displacement</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Childhood development</td>
</tr>
</tbody>
</table>

Sample impacts include stress, toxic exposures, displacement, and childhood development.
Proportion of Households Living in Overcrowded Conditions

Percent Occupied Housing Units with More than 1 Person Per Room
- 0 - 5%
- 5 - 11%
- 11 - 19%
- 19 - 30%
- 30 - 64%

Source: 2000 Census

City and County of San Francisco
Department of Public Health
Environmental Health Section
Proportion of Renter Households Paying Greater than 50% of Income on Rent

% of households whose gross rent* is >50% of last year's income

- 0 - 10%
- 10 - 15%
- 15 - 20%
- 20 - 25%
- 25 - 40%

*M: Gross rent is the contract rent plus the estimated average monthly cost of utilities and fuels.

Source: 2000 Census

City and County of San Francisco
Department of Public Health
Environmental Health Section

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<table>
<thead>
<tr>
<th>Public Infrastructure:</th>
<th>Sample Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public services</td>
<td>Mobility and access</td>
</tr>
<tr>
<td>Parks</td>
<td>Physical activity</td>
</tr>
<tr>
<td>Schools</td>
<td>Social capital and cohesion</td>
</tr>
<tr>
<td>Food retail</td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td></td>
</tr>
</tbody>
</table>
Proportion of Population within 1/4 mile of Neighborhood or Regional Park

Source: San Francisco Department of Recreation and Park
City and County of San Francisco Department of Public Health Environmental Health Section
Healthy Development Measurement Tool (HDMT) – A Bridge Between Health and Planning

- Applied knowledge building from inter-agency community collaboration
- Provided a systematic and objective evaluation methodology to bridge community health needs to urban planning and policy making
- Suitable for long term monitoring of development
- Peer reviewed by national experts
- Adapted beyond San Francisco
**HDMT: Key Elements and Components**

1) Framework of Community health objectives
2) Community-level Health Indicators
3) Policy and Design Strategies
4) Development Targets
5) Public Health Evidence
HDMT Elements

Healthy Development Measurement Tool
A comprehensive evaluation metric to consider health needs in urban development

Home Introduction Tool Instructions The Tool Application Resources About ...

Use the Tool

The Tool » Use the Tool

Use the Tool

Start using the tool by clicking on one of the elements below, or browse a Master List of all the Tool components, including elements, objectives, and indicators. Visit Tool Application Resources for additional information to help conduct your application. Also, visit our Demographics and Health Outcomes Data to obtain baseline information on your community.

- Environmental Stewardship
- Sustainable and Safe Transportation
- Social Cohesion
- Public Infrastructure/Access to Goods and Services
- Adequate and Healthy Housing
- Healthy Economy

Need help? Check out the Application Resources page for more info.
HH. Adequate and Healthy Housing Objectives

HH.1 Preserve and construct housing in proportion to demand with regards to size, affordability, and tenure

HH.2 Protect residents from involuntary displacement

HH.3 Increase spatial integration by ethnicity and economic class

HH.4 Healthy quality housing
Objective pages include:

- **Indicator pages** with associated data to advance the Objectives
- **Development Targets** that provide criteria to evaluate the healthiness of a Plan
- **Health Based Rationales** linking the Objectives to public health
- **Established Standards** (City, State, and/or Federal) that relate to the Objective
- **Policy and Design Strategies** that can be applied to improve a plan or project

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Development Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td></td>
</tr>
<tr>
<td>a. Proportion of housing production to housing need by income category</td>
<td>Benchmark: Does the project set aside 20% of units for affordable housing to contribute to affordable housing need? Regulatory minimum: SF Planning Code Section 316 mandates that 15% of units constructed on all projects of 5 units or more be affordable. Should the developer opt to construct its affordable units off-site, the construction requirement jumps to 20%. Lastly, developers can opt to pay an in-lieu fee instead of constructing units.</td>
</tr>
<tr>
<td>b. Proportion of households saving greater than 50% of their income on their homes</td>
<td>Benchmark: Does the project set aside 20% of units for affordable housing to contribute to affordable housing need? Regulatory minimum: SF Planning Code Section 316 mandates that 15% of units constructed on all projects of 5 units or more be affordable. Should the developer opt to construct its affordable units off-site, the construction requirement jumps to 20%. Lastly, developers can opt to pay an in-lieu fee instead of constructing units.</td>
</tr>
<tr>
<td>c. Housing purchasing capacity of the median income household</td>
<td>Benchmark: Does the project set aside 20% of units for affordable housing to contribute to affordable housing need? Regulatory minimum: SF Planning Code Section 316 mandates that 15% of units constructed on all projects of 5 units or more be affordable. Should the developer opt to construct its affordable units off-site, the construction requirement jumps to 20%. Lastly, developers can opt to pay an in-lieu fee instead of constructing units.</td>
</tr>
<tr>
<td>d. Proportion of households living in overcrowded conditions</td>
<td>Benchmark: Does the project distribute unit size based on the following breakdown of bedroom need: 60% one-bedroom, 25% 2-bedroom and 25% 3-bedroom or more?</td>
</tr>
<tr>
<td>e. Proportion of renter and owner occupied housing</td>
<td>Benchmark: Does the project include a mix of rental and ownership housing within 15% of the current distribution of rental and ownership housing (currently 65% rent and 35% own). In other words, range between 50%-80% rental and 60%-20% owner?</td>
</tr>
<tr>
<td>f. Housing wage as a percent of minimum wage</td>
<td>Benchmark: Does the project set aside 20% of units for affordable housing to contribute to affordable housing need?</td>
</tr>
</tbody>
</table>

Objective HH.1 Preserve and construct housing in proportion to demand with regards to size, affordability, and tenure
Indicator pages include:

- Indicator data in the forms of maps and tables often disaggregated by neighborhood

- Explanations and Limitations of the data

- Research connecting the indicator to health

Table 1. Proportion of households living in overcrowded conditions (2000)

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>11%</td>
</tr>
<tr>
<td>Bayview</td>
<td>24%</td>
</tr>
<tr>
<td>Bernal Heights</td>
<td>14%</td>
</tr>
<tr>
<td>Castro/Upper Market</td>
<td>3%</td>
</tr>
<tr>
<td>Chinatown</td>
<td>36%</td>
</tr>
<tr>
<td>Crocker Amazon</td>
<td>31%</td>
</tr>
<tr>
<td>Diamond Heights</td>
<td>5%</td>
</tr>
<tr>
<td>Downtown/Civic Center</td>
<td>19%</td>
</tr>
<tr>
<td>Excelsior</td>
<td>26%</td>
</tr>
<tr>
<td>Financial District</td>
<td>23%</td>
</tr>
<tr>
<td>Glen Park</td>
<td>3%</td>
</tr>
<tr>
<td>Others</td>
<td>20%</td>
</tr>
</tbody>
</table>
**HDMT – Evaluation Approach**

- Does a place have healthy living and working conditions?
  - Use HDMT indicator data to assess baseline conditions

- Does a plan or project advance health-related conditions?
  - Assess the extent to which a Plan meets HDMT development targets

- What recommendations for planning policies, implementing actions, or project design would advance community health objectives?
  - Develop concrete, specific recommendations
HDMT – Current Applications

- Use of the HDMT in San Francisco
  - Executive Park Sub Area Plan
  - Eastern Neighborhoods Area Plans
  - Western SOMA Community Plans
  - Daggett Place Project

- Adaptations of the HDMT Beyond San Francisco
  - Humboldt County General Plan Growth Scenarios
  - Richmond California General Plan
  - Pittsburg Railroad Ave. Specific Plan
  - Oakland Estuary Specific Plan
What We Learned about Putting Health and Planning

- Deep public interest in health outcomes
- It is possible to bring health needs into the planning process using persistence, service, data, & evidence
- Health provided a “systems view” and reveals trade-offs (e.g. local & regional air pollution)
- Available design strategies can solve health and planning problems (e.g. filtration, traffic calming)
- Health concerns can catalyze a long term inter-agency relationship between planning and health agencies
From Special Projects to Day to Day Work

- Land use regulations for noise and air quality
- Multi-disciplinary land use and health team at the Health Department participates in
  - Project environmental review
  - Designing community parks
  - Locating of childcare and after-school programs
  - Street design Standards
  - Public Housing Redevelopment
- Health impact assessments of major initiatives (e.g., congestion pricing)
Some Caveats…

- Health cannot just be a marketing tool for existing green building and smart growth programs
- Better physical planning is not a silver bullet for health
- Healthy places require implementation, accountability, and monitoring
- Science isn’t enough
- It’s easy to lose sight of inequities
...somebody’s making a lot of money out of changing neighborhoods.

- Gale Cincotta, Chicago Neighborhood Leader 1972
Health and Environmental Justice Challenges for Smart Growth

- Will development protect and improve environmental quality for existing residents?
- Can development leverage needed infrastructure for health and well being?
- Will development result in displacement or facilitate social inclusion and integration?
- Can planning serve to build social consensus for sustainability?
Cities have the capability of providing something for everyone only because and only when they are created by everybody.

- Jane Jacobs
Si, Se Puede...Yes We Can...
Web Resources for HIA Tools

SF Department of Public Health
- www.sfdph.org/phes/

UC Berkeley HIA Group
- http://ehs.sph.berkeley.edu/hia/

Healthy Development Measurement Tool
- www.TheHDMT.org