

Using health impact assessment to translate active living research for more informed public policy decision-making

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Health Impact Assessment is

... a tool for systematically evaluating, synthesizing, and communicating information about potential health impacts for more informed decision-making.

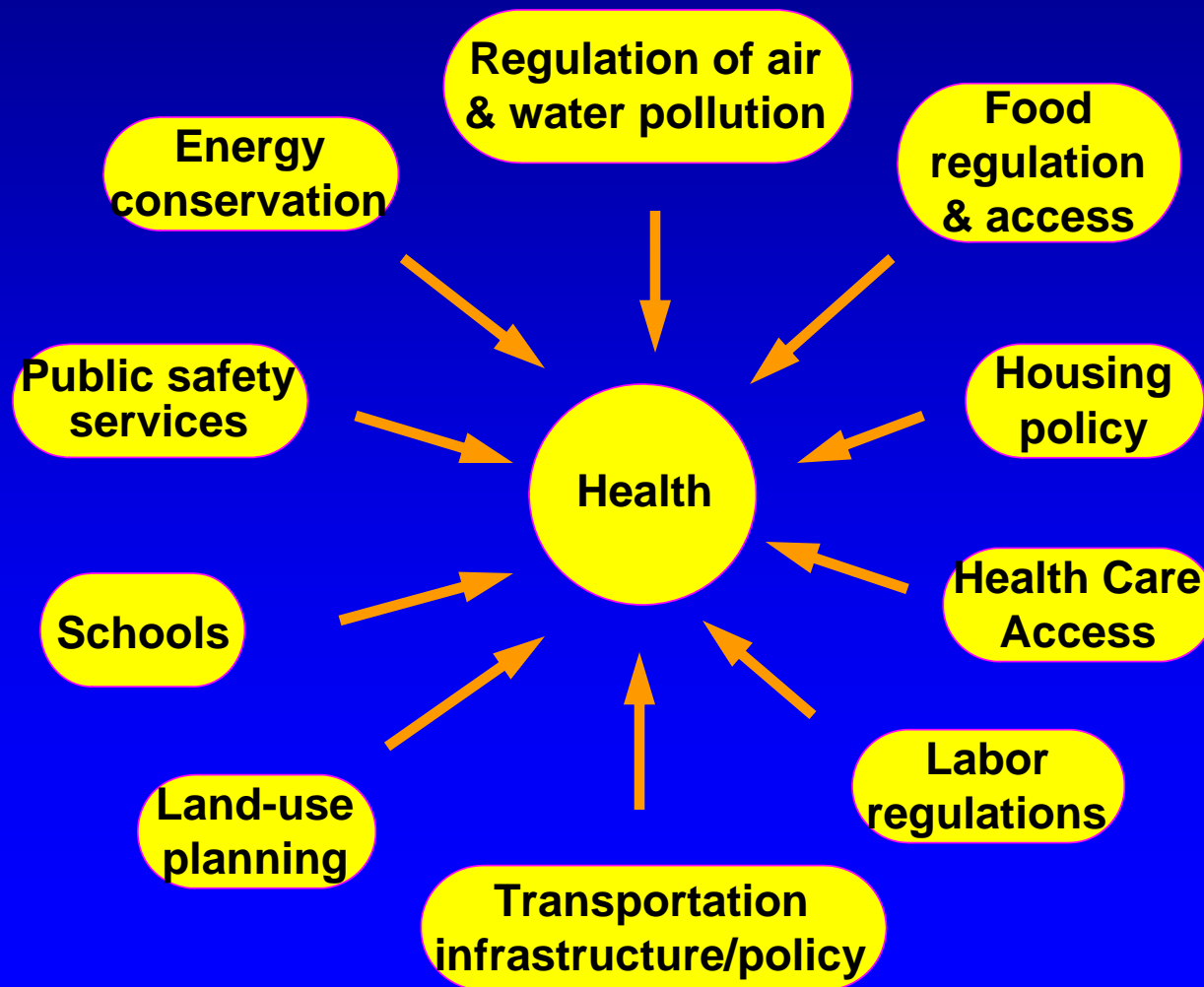


Health impact assessment is

- ◆ Focused on public policy decisions and population health outcomes;
- ◆ Is a multidisciplinary process;
- ◆ Considers a wide range of evidence;
- ◆ Uses a structured framework;
- ◆ Based on a broad model of health.

The impetus for HIA:

Many kinds of policies affect the public's health



Different disciplinary roots and needs shape variants of HIA

e.g. a quantitative analysis of potential reductions in mortality attributable to a “living wage”

**Risk Analysis,
Epidemiology,
etc.**

**Environmental
Impact
Assessment**

e.g. including effects on subsistence hunting, diet and substance abuse among Inuit in an environmental impact statement (EIS) of proposed oil leases on Alaska Native lands

**Health Impact
Assessment**

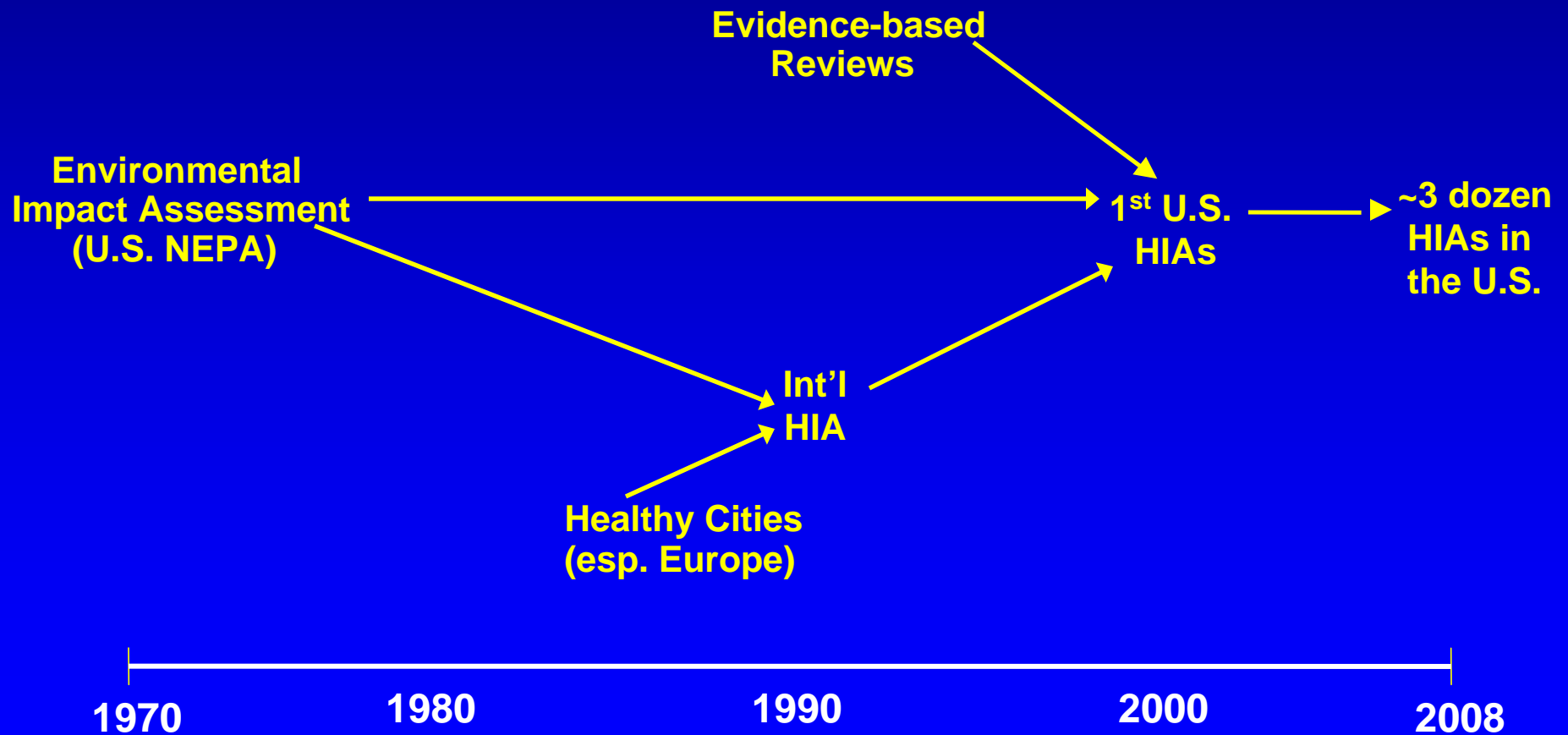
e.g. literature review of price elasticity of demand for foods to infer effects of agricultural subsidies in the Federal Farm Bill

**Evidence-
based
Reviews**

**Community-based
Health Promotion
e.g. “Healthy
Cities”**

e.g. community-led health assessment of pedestrian safety and recreational opportunities in a low income neighborhood slated for redevelopment

HIA Lineage and Timeline



What does a health impact assessment look like?

An HIA could be:

- ◆ A comprehensive 200 page report
- ◆ A 2-page policy brief
- ◆ A “logic framework” and supporting discussion showing causal pathways;
- ◆ A checklist completed by an agency or policy-makers;
- ◆ A spreadsheet or “calculator” allowing users to estimate health impacts for different scenarios;
- ◆ A process for guided community engagement, resulting in testimony given to a policy-making body.

Common elements in HIAs

- ◆ Focus on a specific policy proposal (*typically inter-sectoral*)
- ◆ Prescribed sequence of steps
 1. Screening
 2. Scoping
 3. Analysis
 4. Review and reporting
- ◆ Analysis of health implications
 - Potential benefits
 - Potential harms
 - Opportunities for maximizing benefits/minimizing harm
- ◆ Potential to affect policy process and outcome
- ◆ Fills an information gap for policy-makers or stakeholders

HIA aims to affect policy-making

- ◆ **Tip the scales:** add evidence in favor or against a certain course of action;
- ◆ **Put new issues on the table:** raise awareness of un-/under-recognized health effects;
- ◆ **Change the terms of debate:** encourage open, transparent decision-making and consideration of best available evidence;
- ◆ **Tweak plans:** suggest measures to modify implementation in ways that minimize potential harm and maximize potential benefits;
- ◆ **Bring new parties to the table:** give voice to concerns of affected stakeholders whose concerns have historically been unrecognized or under-valued;
- ◆ **Change institutional missions and responsibilities:** encourage formulation of policies that anticipate potential health effects.

What an HIA might ask...

1. What are the potential health effects?
2. Will the proposal result in significant health benefits or harm?
3. Are the health benefits and risks distributed equitably or in a way that minimizes current disparities in health risks and conditions?
4. What are the health consequences of the status quo?
5. Are there design elements that can be incorporated to produce health benefits in a more cost-effective manner?

HIAs in the United States, 1999-2008

Common health pathways (determinants)

- ◆ Physical activity and obesity
- ◆ Housing adequacy and affordability
- ◆ Pedestrian injuries
- ◆ Air quality, asthma, other respiratory diseases
- ◆ Parks and greenspace
- ◆ Income adequacy; social equity
- ◆ Diet, nutrition, food safety, food insecurity
- ◆ Adolescent risk behaviors – alcohol, drugs, sex
- ◆ Noise
- ◆ Mental health
- ◆ Social capital, community severance/cohesion
- ◆ Access to jobs, stores, schools, recreation

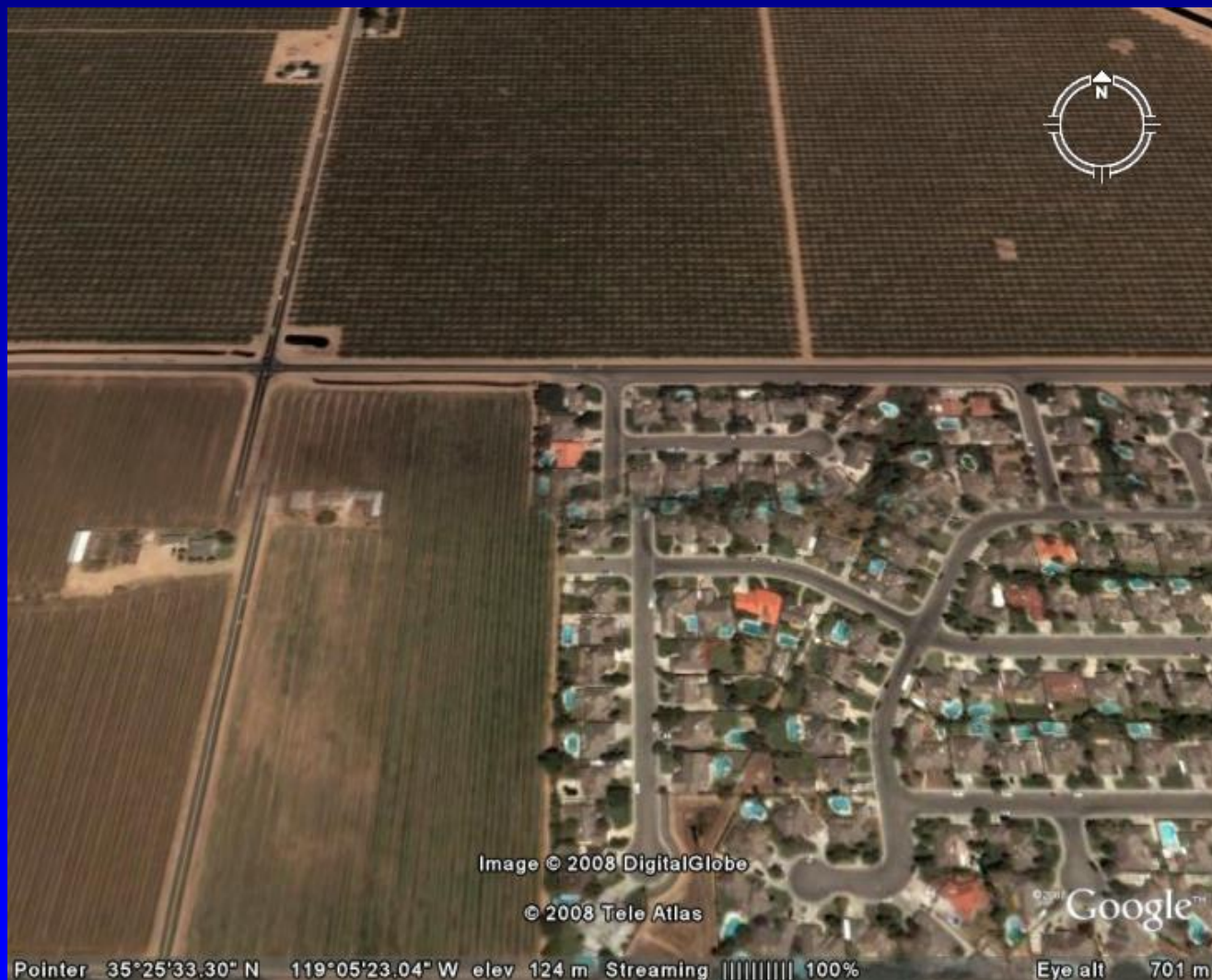
HIAs in the United States, 1999-2008

Physical activity related impacts

- ◆ Minutes of walking associated with redevelopment and changes in pedestrian infrastructure;
- ◆ Minutes of walking associated with walk-to-school promotion;
- ◆ Minutes of moderate-to-vigorous physical activity associated with changes in state P.E. policies;
- ◆ Duration of physical activity associated with expanded transit availability and utilization;
- ◆ Availability, utilization and geographic inequalities in the distribution of recreational facilities;
- ◆ The impact of joint-use agreements on the availability of opportunities for physical activity.

Some policy issues affecting physical activity

Sprawl



Some policy issues affecting physical activity

Park access and park policies



French Park, Santa Ana. Photo courtesy of Latino Health Access
(<http://www.latinohhealthaccess.org>)

Some policy issues affecting physical activity

Pedestrian/Bicycle Infrastructure and Safety



Photo courtesy of the Kern County Dept. of Public Health, 2008

Some policy issues affecting physical activity

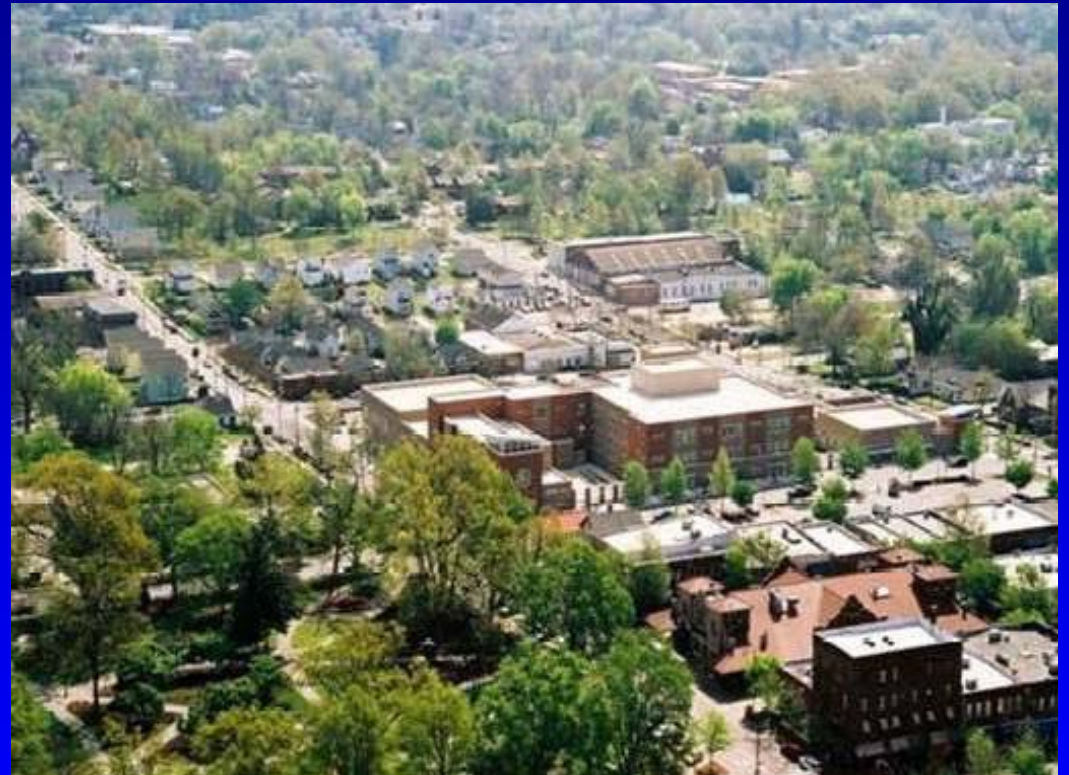
Joint use agreements



Photo courtesy of Latino Health Access (<http://www.latinohhealthaccess.org>)

Some policy issues affecting physical activity

School siting



Photos from U.S. EPA Smart Growth Office website

Some policy issues affecting physical activity

Alternative Land Uses



Photo from California Department of Conservation, DOGGR



Some policy issues affecting physical activity

Complete streets



Some policy issues affecting physical activity

Mass Transit...or not



Photo by North County Transit District (San Diego, CA)



Photo by Tatianes via Flickr

Steps in HIA

◆ Screening

» *Should an HIA should be conducted ?*

◆ Scoping

» *How will it be done? What will be looked at?*

◆ Impact assessment

» *What are the impacts, their magnitude and significance? Who is impacted?*

◆ Reporting and review

» *Producing a coherent, usable synthesis of findings for target audiences (e.g. policy-makers)*

◆ Evaluation and monitoring

» *Has the HIA influenced the decision making process (and the subsequent proposal)?*

» *Monitoring to ensure that the policy is implemented as recommended*

Scoping: What and how?

Pathways in a “greyfield” redevelopment HIA

1. Physical activity
2. Injury prevention
3. Social capital
4. Community economic conditions
5. Noise
6. Air pollution

Scoping: What and how?

Elaborating causal pathways

***Policy/
Project***
e.g. transit-
oriented
development

→ ***Proximate
effects***
Patterns of land-use,
transit use, home-
work proximity

→

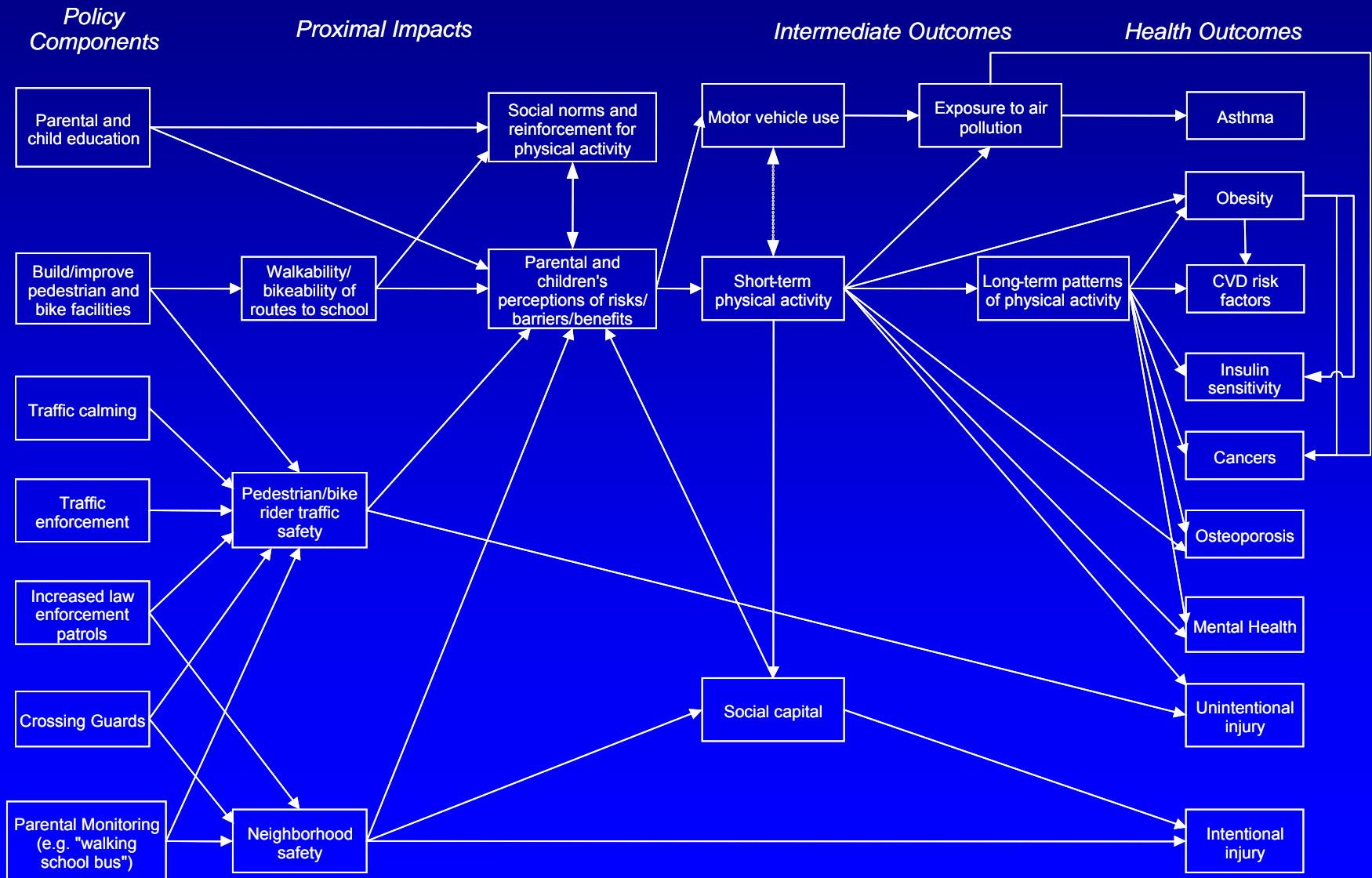
***Intermediate
outcomes on
determinants of
health***
Physical activity,
disposable income,
discretionary time, social
capital, community
economic development.

→

***Health
outcomes***
Mortality,
injury/disease
rates, years of
healthy life, etc.
(directly affected
by PA and effects
mediated by body
fat/BMI)

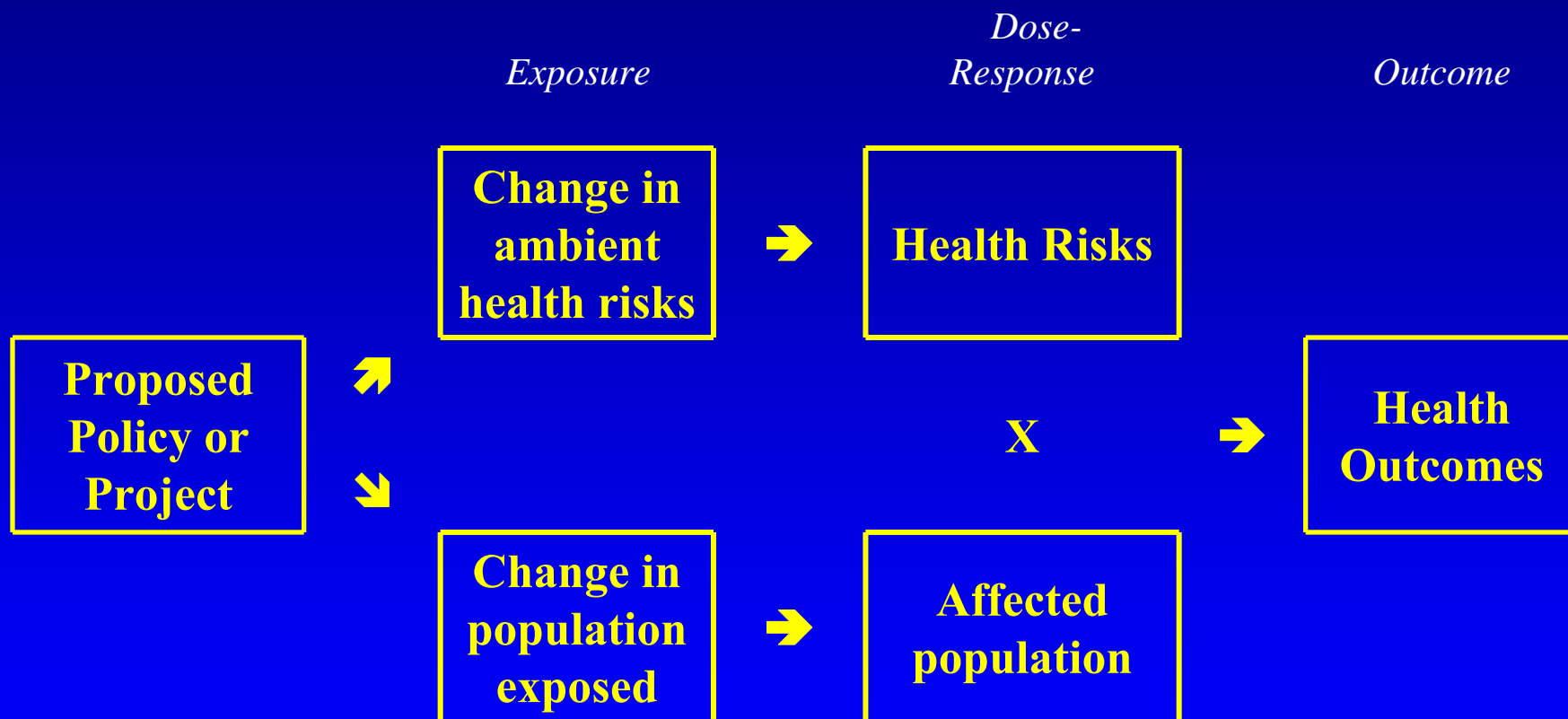
Scoping: What and how?

Creating a logic framework



Impact assessment

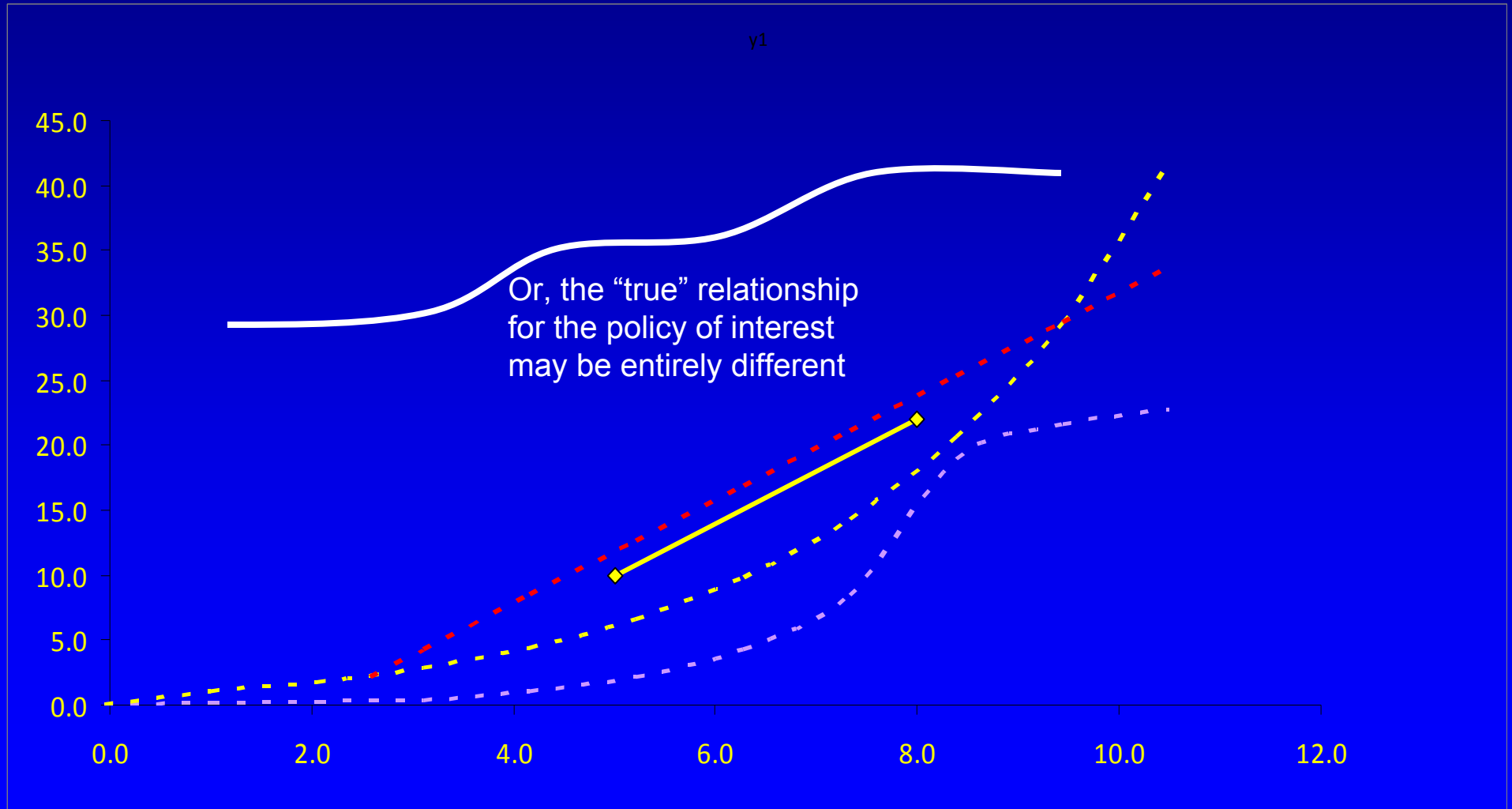
General paradigm from risk analysis



Data needs for risk analysis in HIA

1. Clearly defined policy
2. Definition of the population of interest
3. Baseline distribution of risk factors (i.e. exposures) in the affected population
4. How the proposed policy will affect prevalence and distribution of risk factors
5. How the proposed policy will change who is in the affected population
6. Dose-response relationship

The perils of extrapolating from a few data points to different locales and types of policies



Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta



- Collaborative Analysis with
- Centers for Disease Control
 - Georgia Tech, School of Architecture & Planning
 - UCLA School of Public Health

Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta

Aim: Redevelop a “greyfield” into an economically vibrant, pedestrian-friendly environment



Project Elements

- ◆ Improve pedestrian infrastructure;
- ◆ Rebuild shopping center parcel based on Smart Growth principles;
- ◆ Increase density, connectivity and land uses in adjacent areas.

Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta

Problems estimating changes in physical activity

1. Many studies describe the association between walking and walkability, but little data on the dose-response.
2. Little agreement on how to measure walkability.
3. No data on baseline physical activity specific to the project area.

Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta

Part 1 of a solution: A tool to assess walkability –
“Pedestrian level-of service”

- ◆ **Directness**: Does the pedestrian network provide the shortest possible route?
- ◆ **Continuity**: Is the network free from gaps and barriers?
- ◆ **Street Crossings**: Can the pedestrian safely cross streets?
- ◆ **Visual Interest and Amenity**: Is the environment attractive and comfortable, offering protection from harsh conditions?
- ◆ **Security**: Is the environment secure, well lighted with good line of sight to see the pedestrian, and far away enough from vehicular traffic to provide a feeling of safety?

See <http://www.kcmo.org/planning.nsf/plnpres/walkability>

Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta

Part 2 of a solution: Extrapolation from existing research

Cross-sectional comparison between two San Diego neighborhoods



Neighborhood 1



Neighborhood 2

Pre-/Post- Changes in NE Plaza, Atlanta



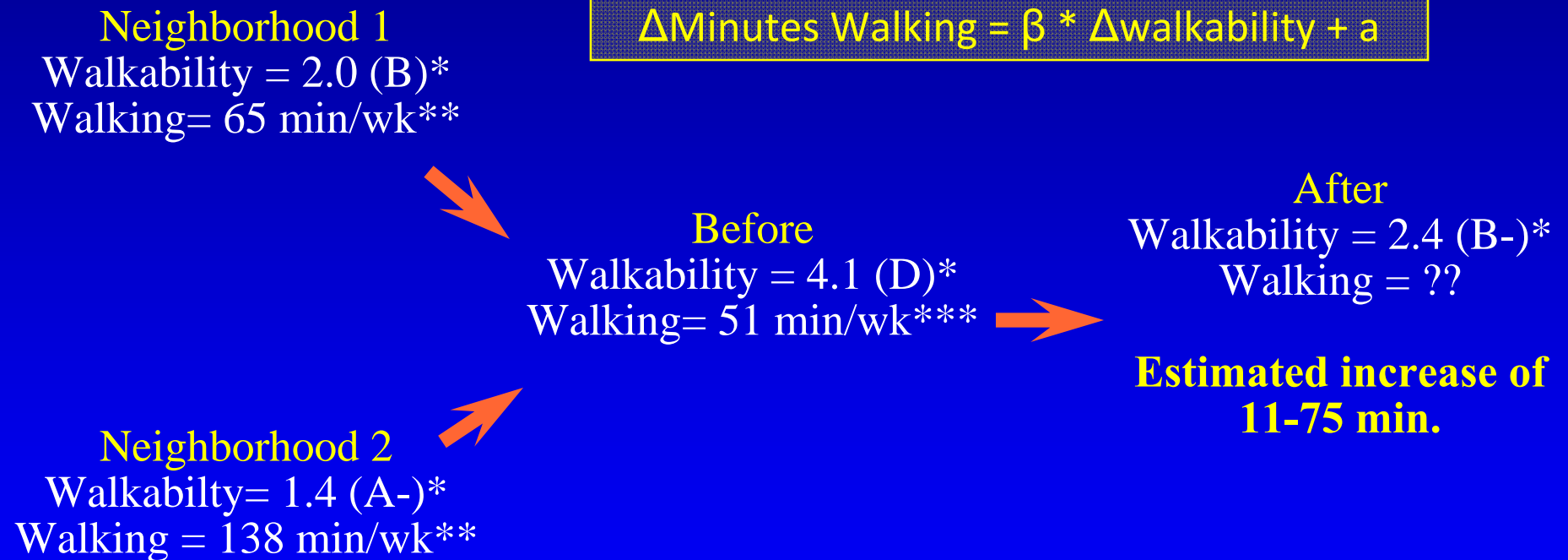
Before



After

Examples of HIA impact assessment

NE Plaza Redevelopment, Atlanta



*Ped-LOS (collected by HIA project team)

**Saelens et al (2003)

***estimated avg for Atlanta MSA, NHTSA, 2001

Examples of HIA impact assessment

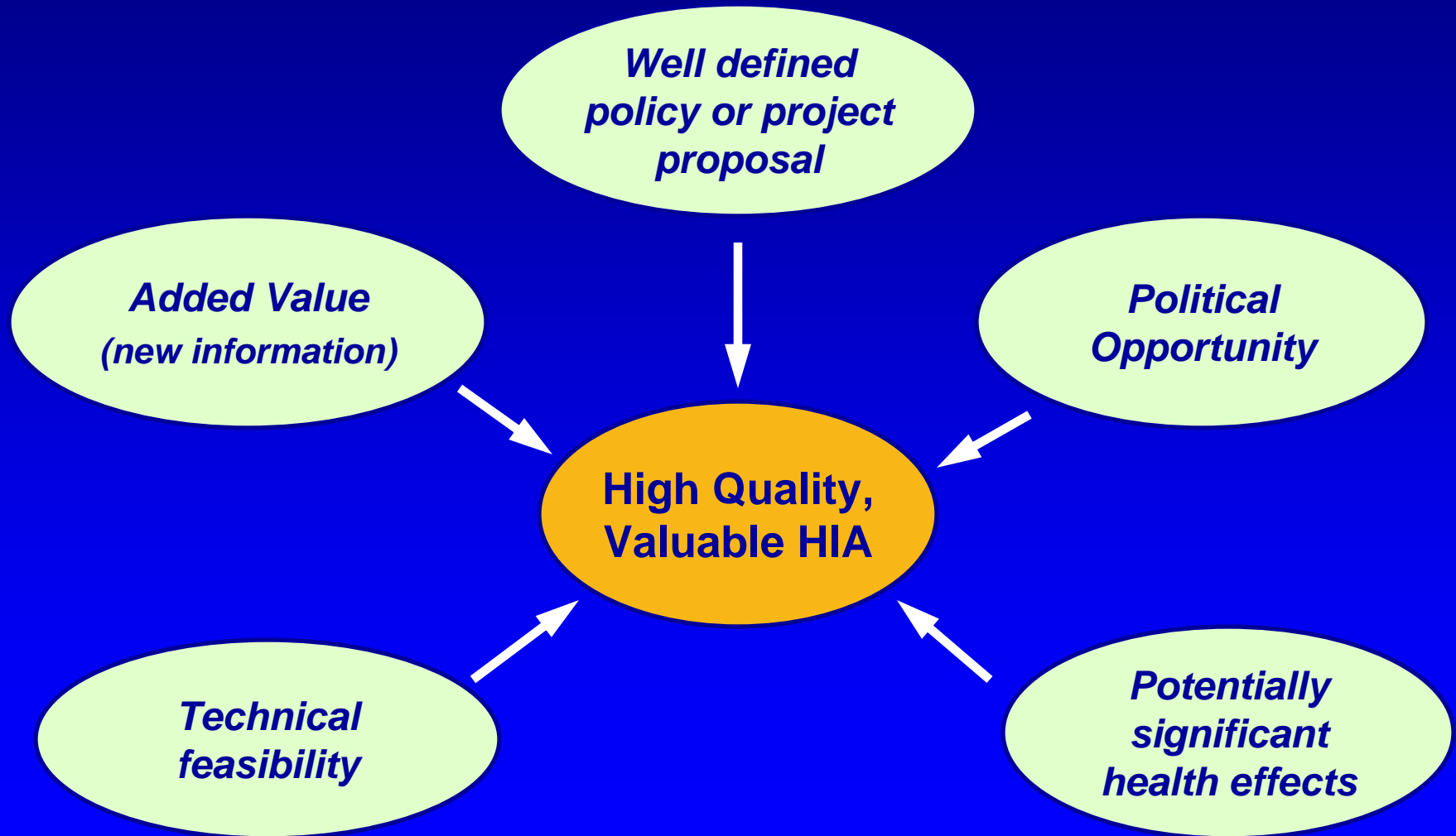
NE Plaza Redevelopment, Atlanta

Using the results

- ◆ Building the case that design influences walkability and walking
- ◆ Providing a model to allow examination of alternative scenarios and broadening understanding of cost/health trade-offs
- ◆ Supporting opportunities for community input

Advancing physical activity analysis in HIA

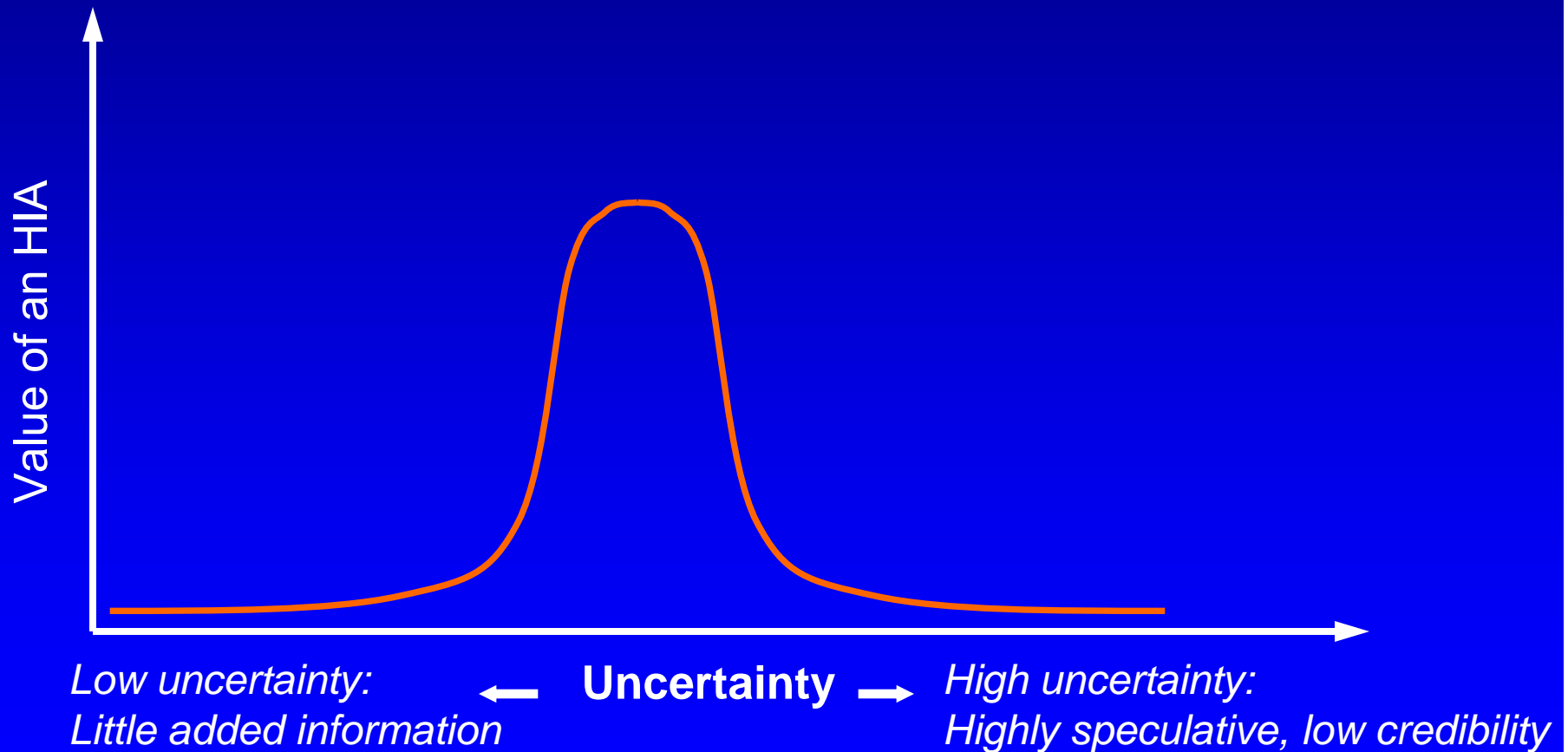
Best prospects for an HIA



Advancing physical activity analysis in HIA

Added Value

The “Uncertainty Dilemma”



Advancing physical activity analysis in HIA

Technical Feasibility - Building on the most useful, adapting the marginal

Headaches



Happiness

- ◆ Days of at least 30 minutes of light-to-vigorous PA
- ◆ Self-reported minutes of PE
- ◆ Self-reported percent of PE class engaged in MVPA
- ◆ Perceived environment

- ◆ Trips by mode and destination

- ◆ Daily minutes of observed MVPA by activity

Advancing physical activity analysis in HIA

Assess and report dose-response information

Dose-response relationship: Income and Mortality (from Backlund et al, 1999)



Advancing physical activity analysis in HIA

Potentially Significant Health Effects

Choosing health “endpoints”

Balance statistical, biological and political relevance

Physical activity analysis in HIA

Stopping at Δ PA...or venturing into BMI and health outcomes

**Unified
Analysis**



**2-Stage
Analysis**

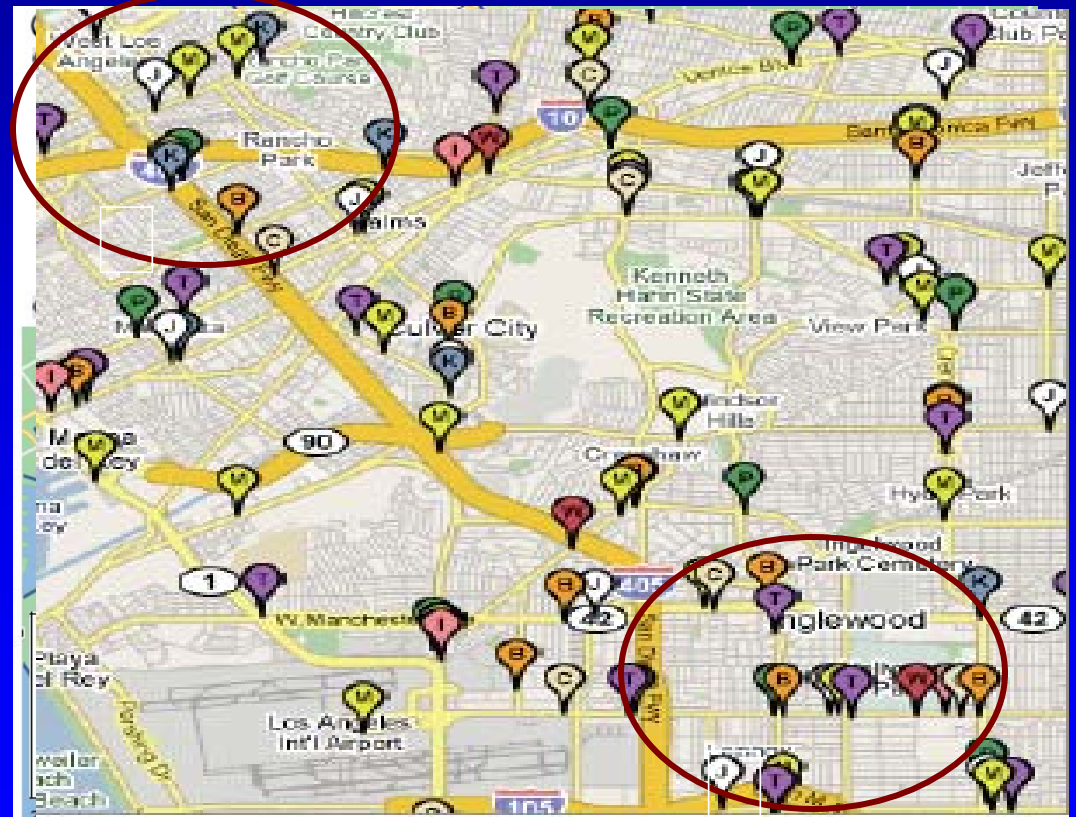


Advancing physical activity analysis in HIA

Using Maps – Proceed with Caution

- Presenting data on maps can be informative
- Maps may also be misleading
- Geographic correlation \neq Causal association

Fast food in African-American neighborhoods?



Race/ethnicity map from Healthy City Project (<http://www.healthycity.org>)
Fast food map from <http://fastfoodmaps.com>

Collaborate, borrow and share



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LINKS

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Related Info.

Pathways

- nutrition
(forthcoming)
- physical activity
- economics
(forthcoming)
- social capital
- health services
(forthcoming)
- mobility
(forthcoming)

Sectors

- agriculture
(forthcoming)
- planning
(forthcoming)

Methods/Tools

- descriptive
(forthcoming)
- population health
statistics (forthcoming)
- census

HIA Archive : Trenton Farmer's Market

Modifications to the Trenton Farmer's Market

Authors: UCLA HIA Project, UCLA School of Public Health

Date: March 2007

Links

HIA Report:

[UCLA HIA Project](#)

Background reports:

[The Trenton Farmer's Market \(Trenton, N.J.\)](#)

[Revitalizing the Trenton Farmer's Market \(PPS Report\) - PDF](#)

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Health Impact Assessment
Information & Insight for Policy Decisions



Summary of the HIA *

External link to the full report forthcoming

Policy or Project

In the United States, a public market has been usually defined as a venue where vendors sell fresh food from open stalls. Public markets must have public goals which give a defined civic purpose to the activity