The Value and Use of Urban Health Indicator Tools in Urban Planning Policy and Decision-Making

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Presentation overview

• Context

• Research approach

• Characteristics of urban health indicator tools  
  (Systematic review part A)

• UHI tools in the policy and decision-making process  
  (Systematic review part B)

• Case study example: Southwark, London

• Reflections and next steps
Context:
Defining urban health indicator (UHI) tools
Urban Health Indicator (UHI) Tools are…

‘a collection of summary measures about the physical urban environment’s contribution to human health and wellbeing’

(Pineo et al., 2017, p. 2)

Example urban health indicators…

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Effect-based</th>
<th>Exposure-based</th>
<th>Objective</th>
<th>Subjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of people who live within a half-mile of parks</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>% respondents who think the quality of new developments has got better</td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>% of cyclists injured in vehicle collisions</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>% respondents who feel safe when outdoors in their neighbourhood after dark</td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>
About the San Francisco Indicator Project

The San Francisco Indicator Project is a neighborhood-level data system that measures how San Francisco performs in eight dimensions of a healthy, equitable community. The goal of this project is to support collaboration, planning, decision making, and advocacy for social and physical environments that meet the needs of all citizens.
Tree canopy

Descriptive Title:
Percent of land covered by tree canopy

Geographic Unit of Analysis:
Polygon

San Francisco Tree Canopy (2013)
727-791 Northeast Northlake Place
University District, Seattle, 98105
Commute to Downtown Seattle

- 9 min
- 25 min
- 24 min
- 60+ min

Walk Score

**Very Walkable**
Most errands can be accomplished on foot.

Transit Score

**Excellent Transit**
Transit is convenient for most trips.

Bike Score

**Very Bikeable**
Steep hills, excellent bike lanes.

Looking for a home for sale in Seattle?
### London ward level well-being scores

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Life Expectancy</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Childhood Obesity</td>
<td>5</td>
</tr>
<tr>
<td>Health</td>
<td>Incapacity Benefits claimant rate</td>
<td>5</td>
</tr>
<tr>
<td>Economic Security</td>
<td>Unemployment Rate</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Crime Rate</td>
<td>5</td>
</tr>
<tr>
<td>Safety</td>
<td>Safety - Deliberate Fires</td>
<td>5</td>
</tr>
<tr>
<td>Education</td>
<td>GCSE point scores</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Children - Unauthorised Pupil Absence</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Families - Children in out-of-work households</td>
<td>5</td>
</tr>
<tr>
<td>Access</td>
<td>Public Transport Accessibility Score</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Environment</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Access to public open space &amp; nature</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Subjective well-being average score</td>
<td>5</td>
</tr>
</tbody>
</table>

### Boroughs
- (All)
- Barking and Dagenham
- Barnet
- Bexley
- Brent
- Bromley
- Camden
- City of London
- Croydon
- Ealing
- Enfield
- Greenwich
- Hackney
- Hammersmith and Fulham
- Harlingey
- Harrow
- Havering
- Hillingdon
- Hounslow
- Islington
- Kensington and Chelsea
- Kingston upon Thames
- Lambeth
- Lewisham
- London
- Merton
- Newham
- R B of Kensington and Chelsea
- R B of Kingston upon Thames

**Choose Year**
- 2009
- 2010
- 2011
- 2012
- 2013
- Change per year
Context: Value of indicators
Potential value at multiple stages of the policy process

- **Evidence**
- **Engagement**
- **Vision & Options appraisal**
- **Spatial Plan**
- **Development management**
- **Monitor**

Images from top centre clockwise: BBC, Jseattle, Urbed x2, HSP, PAS
Tools for lobbying and persuasion?

New homes within walking distance to rail and metro stations\(^1\)

<13%\(^1\)

43% British people living in houses which do not meet Living Home Standard\(^2\)

\(^1\)Royal Town Planning Institute  \(^2\)Shelter
Tools for lobbying and persuasion?

Increased value of homes in highly walkable communities in USA (Cotright, 2009)

$4k - $34k
Proposed benefits of indicators

- inform policies and decisions
- monitor policy impact over time
- compare performance with local, regional, national or international levels
- determine targets for improvement
- show performance publicly (accountability/performance management)
- support funding bids or allocations
- serve as an ‘early warning’ of potential issues
- involve the public in prioritisation and definition of policy goals

(Christakopoulou et al., 2001; Corburn and Cohen, 2012; Kingsley and Pettit, 2011; Lawrence, 2008; Rothenberg et al., 2015; Songsore et al., 1998; The Pastille Consortium, 2005; Wong, 2006)
In summary indicators may help planners with this problem...
Context:
Indicators in the policy process
Indicators influence policy and decision-making via this model...

- Measure environmental exposures (e.g. air pollution)
- Aggregate data & compile statistics
- Present indicators (e.g. City Profile)
- Inform decisions & policies (e.g. urban planning)

Modified from Briggs et al., 1996, p. 22
Traditional model of influence

- Measure environmental exposures (e.g. air pollution)
- Aggregate data & compile statistics
- Present indicators (e.g. City Profile)
- Inform decisions & policies (e.g. urban planning)

2 significant challenges for this model and UHI tools generally

- opposing conceptualisations of indicators and their use
- the complexity of urban health and the policy/decision-making process
**Rational/Technical Tool**
- measure/compare/assess
- hierarchy knowledge
- universal truths
- technical/expert task

**Social Construct**
- interpret/judge
- equal knowledge
- context dependent
- political task
Summary of context and gaps

- Lack of research on use of indicators.
- Dominant models of indicator/evidence use are linear, ignoring complexity.
- Lack of a model to account for use of UHI tools in complex policy and decision-making process.
- Lack of clarity on how UHI tools address complex urban health system to support health promotion.
Research approach
Research aim and objectives

**Aim:** Explore how urban health indicators are used to promote health in urban planning policy and decision-making.

**Objectives:**

1. Outline how UHI tools present and measure the impact of the urban environment on health, especially in relation to complexity

2. Produce mental model(s) of indicator producers and users regarding the use of UHI tools in urban planning policy and decision-making

3. Investigate the potential value of UHI tools for health promotion in the planning policy and decision-making process, particularly in relation to the complexity of this process
Methodology – Mixed methods

Explanatory sequential design

QUAN

Systematic Review Part A
Census & Taxonomy
(145 tools, 8006 indicators)

QUAL

Systematic Review Part B
Narrative synthesis
(19 studies)

Semi-Structured Interviews
2 case studies
(~20 interviewees)

Participatory Modelling
2 workshops
(~20 participants)

QUAN + QUAL

Interpret Results
Integrate QUAN & QUAL results

SECONDARY RESEARCH

PRIMARY RESEARCH
Characteristics of UHI tools (part A)
Objectives & Protocol

- ‘To create a census and taxonomy of urban health indicator tools. [Part A]

- To understand how UHI tools are used in the policy and decision-making process. [Part B]

- To explore the perceived impact of UHI tools on policy and decision-making. [Part B]

- To investigate the value of UHI tools in relation to simplifying, representing or addressing complex systems’. [Parts A & B]

Pineo et al. (2017a, p.2)
Data extraction (Part A)

- ‘Scale – At what scales can the system be applied or measured? (e.g. neighbourhood or city)
- Geography – Which areas can this system be applied in (e.g. specific cities or nations)?
- Scope – What aspects are analysed (e.g. built environment, health outcomes, demographics)?
- Producer – Which organisation developed the system? What type of organisation?
- Funders – Which organisations funded the indicator system?
- Purpose – What is the stated purpose? (e.g. research and/or informing policy)
- Methodology – Is there a published methodology and what are its characteristics?
- Evidence-base – Does the methodology refer to evidence which was used to inform the system? What is the nature of this evidence?
- Weighting – Is there a weighting system and what are its characteristics?
- Complexity – Does the methodology refer to complexity and, if so, in what context?
- Uncertainty – Does the methodology refer to uncertainty and, if so, in what context?
- Maps – Is there an option to view the data on maps?
- Publication date – When was the system published?
- Source – Where was this information found?
- Indicators – Which indicators are reported?’

Pineo et al. (2017a, p.4)

- ‘topic: concept that the UHI tool measured (e.g. health or liveability)
- main source of data (e.g. municipal datasets or resident surveys)
- indicator type: subjective or objective (defined in Lowe et al.30 p.136)
- whether the tool had been used beyond research.’

Pineo et al. (In press, p.5)
Part A – Results

PRISMA flow chart
145 Urban Health Indicator tools (8006 indicators)
Change over time of proportion of UHI tools by spatial scale compared with cumulative growth of UHI tools. N.B. Missing data for 9/145 UHI tools: 7 did not report a date of publication and 2 did not report spatial scale.
Complexity in the UHI tool methodologies

‘Indicators are used to simplify information about complex phenomena, ...in order to make communication easier and quantification possible.’
Hardi and Pintér, 2006, p.130

‘...it is clear that single figure measures can mask a much more complex situation.’
London Sustainable Development Commission, 2004, p.8

‘policy action may not easily follow the identification of environmental health problems ... [due] to the complexity of the policy process.’
Hunt and Lewin, 2011, p.189
Key findings

Neighbourhood scale and digital UHI tools are increasing

Nature of how UHI tool methodologies address complexity

Developed UHI tool taxonomy

Majority of UHI tools intend to inform policy and decision-making…

Majority of UHI tools are evidence-based…

Similarity in the domains measured across UHI tool topics
UHI tools in planning policy and decision-making (part B)
Systematic Review Part B – Early Results

- Records identified through database searching (n = 8999)
- Additional records identified through other sources (n = 98)

  Records after duplicates removed (n = 6,510)

  Records screened (n = 6,510)

  Full-text articles assessed for Part A & B eligibility (n = 370)

  Studies included in Part B qualitative synthesis (n = 19)

  Full-text articles excluded Part B, with reasons (n = 351)
  - Exclude on Scope of study: 335
  - Exclude on Policy field: 6
  - Exclude on Language: 4
  - Exclude on Media Type: 2
  - Exclude Not Available: 4
<table>
<thead>
<tr>
<th>Place</th>
<th>Year</th>
<th>Authors</th>
<th>Method</th>
<th>Researchers also producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne, Australia</td>
<td>2015</td>
<td>Lowe et al</td>
<td>Workshops</td>
<td>Yes</td>
</tr>
<tr>
<td>Richmond, USA</td>
<td>2014</td>
<td>Corburn et al.</td>
<td>Case study</td>
<td>Yes</td>
</tr>
<tr>
<td>San Francisco, USA</td>
<td>2014</td>
<td>Bhatia</td>
<td>Case study</td>
<td>Yes</td>
</tr>
<tr>
<td>Richmond, USA Nairobi, Kenya</td>
<td>2012</td>
<td>Corburn &amp; Cohen</td>
<td>Case study</td>
<td>Yes</td>
</tr>
<tr>
<td>Seattle, USA</td>
<td>2011</td>
<td>Lerman</td>
<td>Project report</td>
<td>Yes</td>
</tr>
<tr>
<td>Ghent, Belgium</td>
<td>2010</td>
<td>Van Assche et al</td>
<td>Case study</td>
<td>Yes</td>
</tr>
<tr>
<td>Bristol, UK</td>
<td>2009</td>
<td>Shepherd &amp; McMahon</td>
<td>Case study</td>
<td>Unknown</td>
</tr>
<tr>
<td>San Francisco, USA</td>
<td>2008</td>
<td>Farhang et al.</td>
<td>Case study</td>
<td>Yes</td>
</tr>
<tr>
<td>Cape Town, South Africa</td>
<td>2000</td>
<td>Hunt &amp; Lewin</td>
<td>Ethnographic</td>
<td>Yes</td>
</tr>
<tr>
<td>Lucknow, India</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcutta, India</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Howrah, India</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States (32 cities)</td>
<td>1988</td>
<td>Landis &amp; Sawicki</td>
<td>Survey</td>
<td>No</td>
</tr>
</tbody>
</table>
Rational/Technical Tool
- measure/compare/assess
- hierarchy knowledge
- universal truths
- technical/expert task

Social Construct
- understand different fields
- co-define concepts
- co-produce indicators
- co-create policy
- co-monitor policy impact

Participatory Governance Approach
- interpret/judge
- equal knowledge
- context dependent
- political task
Case study: Southwark, London
Using the BRE Healthy Cities Index

• International index of urban health indicators
• Exposure-based and focused on built environment
• 10 categories and 58 indicators
• BRE Causal Pathways Framework
• Launch date TBC

Impact of BRE Causal Pathways Framework in Southwark

- Used to frame discussions – moving from the ‘Health Outcomes’ side of the Framework working back to the ‘Urban Environment Exposures’

- Demonstrated the interconnected built environment issues affecting the council’s biggest health concern, non-communicable diseases

- Helped expose tensions between health objectives and other goals

- Highlighted the importance of individual design decisions and how these are measured over time

Summarised from Pineo et al. in press
Translating community perceptions of health and place into local planning policy and monitoring frameworks

Helen Rives, Simon Bevan, Andrew Ruck, Dr Doug McNab and Cliona Devlin | 08 Feb 2018

This paper describes research looking at three key health themes – social interaction and isolation, obesity and inactivity, and health service provision and access – and which focused on two key regeneration areas.

There are many aspects of the physical urban environment that can impact residents’ health and wellbeing, both positively and negatively. Transport systems, for example, can support residents to achieve the recommended level of physical activity; they can also, however, create harmful air pollutants. In recognition of the relationship between the built environment and health, Southwark’s planning department worked with public health colleagues in the council and in the neighbouring borough of Lambeth to explore residents’ perceptions of health and place in areas with significant planned regeneration. The project was funded by Guy’s and St Thomas’s Charity. This paper outlines the process and findings of the local research project and describes how the results are being used by Southwark Council to inform planning policy for the borough and, specifically, the Old Kent Road Opportunity Area.

Background

Southwark is a London borough located along the south side of the River Thames with excellent access to the jobs and amenities of the city centre. Its population of 309,000 people is young and diverse, with almost half (45 per cent) of the borough’s residents from a non-white background.

Although the borough is ranked the 12th most deprived in London (23rd in England), the council covers some of London’s most expensive property markets along the south bank of the river and is characterised by pockets of extreme wealth and deprivation. Inequalities and deprivation contribute to some of the residents’ primary health challenges, yet Southwark’s major employers, good schools and community amenities make it a prime candidate to support healthy urban living.

There are some positive healthy behaviours related to the built environment in Southwark, for example, residents walk and cycle more than their London peers. There are also some key challenges associated with the borough’s environment. The data in table 1 show how Southwark compares against its neighbouring boroughs, London and England in several key factors related to health and the built environment. Notably, Southwark has lower rates of excess winter deaths and fuel poverty than its London peers and the England average. There are, however, many areas that require improvement such as air pollution, overcrowding, and use of outdoor space for health and exercise.

Table 1: Comparison of natural and built environment indicators for Southwark, its neighbouring boroughs, London region and England.
Reflections and next steps
Potential unintended consequences/challenges for urban health indicators

- Complexity of urban health and the policy process
- Validity of the indicators/assessment tools
- Comparing results in different contexts
- Data availability, aggregation, privacy
- May suggest inappropriate policy/design focus or responses
- Mismatch between indicator and design measures
What do you think?

- Are you aware of planners who are making use of UHI tools in policy and decision-making?
- If not, why not?

Please contact me if you’d like to discuss your experience in more detail to contribute to my research.

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References


