Report of Consultation Meeting on Urban Health Metrics Research

23-25 February, 2011

World Health Organization
Centre for Health Development
(WHO Kobe Centre)

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World Health Organization
Centre for Health Development

Disclaimer

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[1] Unable to attend in person but delivered presentation via Skype.

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Background

Urbanization has been a constant driving force throughout civilization, offering opportunity, prosperity, and promise. For the first time in human history over half the world's population now lives within an urban setting. Compounding this monumental demographic shift is the speed at which urbanization is occurring—by the year 2050, an estimated 70% will be city-dwellers.[2] Projected growth is expected to disproportionately affect cities within developing countries; cities such as Phnom Penh (Cambodia), Tijuana (Mexico), Marrakesh (Morocco), and Lagos (Nigeria) are expected to experience a 4% annual growth rate, effectively doubling their populations within less than two decades.[1]

The array of choice and opportunity afforded to city-dwellers offers greater access to services that distinguish urban living, and health services are no exception—urban centres often draw the best health workers and boast the best medical institutions. The same environment, however, fosters concentrated risks and health hazards. Large numbers of people living in proximity strain and often overwhelm social and health infrastructure, contributing to increased risk of infectious diseases, violence, injuries and unmet needs for services. Urban environments also promote unhealthy lifestyles through modification of physical behavior and diet which are associated with the increase of non-communicable diseases. Cutting across all of these issues are glaring inequities that stem from the unfair distribution of power and resources within cities.

Actions to reduce such problems should be informed by evidence derived from valid and reliable metrics. However, urban health metrics remain underdeveloped and fraught with various constraints. Urban health information systems, especially in developing countries, are often characterized by weak routine data collection. Cities vary on many dimensions making it difficult to develop standardized metrics. As a result, the development of a robust set of appropriate metrics has not kept pace with the rapidly growing need to assess and respond to urban health inequities.

In collaboration with a wide network of partners including city and national officials, international organizations, researchers, and civil society representatives, the World Health Organization Kobe Centre (WKC), based in Japan, seeks to develop improved measures and methods to enhance the capacity for understanding urban health problems and for guiding appropriate actions. In 2006-07, WKC served as the hub for the Knowledge Network on Urban Settings, which was one of the nine knowledge networks supporting the work of the WHO Commission on Social Determinants of Health. The findings from this network elucidated the complex web of determinants of urban health and the actions needed to address them.[3] In order to facilitate such actions, particularly at the local government level, WKC subsequently developed the Urban Health Equity

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[2] WHO/UN-HABITAT. *Hidden cities: unmasking and overcoming health inequities in urban settings*. Geneva, World Health Organization, 2010.

[3] Knowledge Network on Urban Settings. *Our cities, our health, our future: acting on social determinants of health equity in urban settings. Report to the WHO Commission on Social Determinants of Health*. Geneva, World Health Organization, 2008 (http://www.who.or.jp/publications/2008-2010/KNUS_final_report.pdf, accessed 11 March 2011).

Assessment and Response Tool (Urban HEART).[4] A key principle of this priority-setting tool is that rational action to address health and health inequity in cities requires sound evidence.

This meeting was convened in recognition of the need to improve urban health metrics to meet the health and equity concerns of an increasingly urban global population, and the substantial expertise and momentum that now exist to take this task forward. Building upon the prior work of relevant research collaborations, namely the Global Research Network on Urban Health Equity and the Roundtable on Urban Living Environment Research, the aim was to bring together experts in health, urban studies, and metrics from different levels of government, organizational background and geographic representation, in order to explore pathways to further advance research on urban health metrics.

Objectives

- To share information about key initiatives and stakeholders in developing urban health metrics.
- To review the challenges and opportunities for developing urban health metrics.
- To develop recommendations on specific issues related to improving urban health metrics for action.

Expected Outcomes

- Exchange of information on key initiatives and stakeholders relevant to urban health metrics development.
- Identification of challenges and opportunities for developing urban health metrics.
- A set of recommendations on improving the availability, quality and application of urban health data, including a recommendation on developing a unitary global urban health index.

[4] WHO. *Urban HEART: urban health equity assessment and response tool*. Geneva, World Health Organization. 2010. (http://www.who.or.jp/urbanheart/UrbanHEART_GUIDE.pdf, accessed 11 March 2011).

Methods

In preparation for the meeting, participants were asked to review two background papers prepared on behalf of WKC which focused on 1) a review of key data sources and monitoring mechanisms for urban health, and 2) an exploration of the methodology for developing a global urban health index, respectively.[5,6] These documents were circulated in advance with the intention of stimulating dialogue and providing a common platform to launch discussion during the meeting.

There were a total of 16 participants, comprising a mix of selected experts including scientists and policy-makers from local, national and international organizations, academic institutions and independent research centres from Africa (2), Europe (6), Asia/Pacific (2), and America (6).

Plenary presentations and discussions were structured around four sessions spanning the range of current issues in urban health metrics research, from measurement to policy translation (see Annex #1 for meeting programme). Presentations were brief and designed to stimulate discussion. Subsequent group work allowed participants to further elaborate on issues raised in the plenary discussions. Based on the plenary discussions and group work results, a set of recommendations were agreed upon by the participants.

The meeting was conducted in English.

Summary of Presentations and Discussion

Current landscape of international research on urban health and equity

Presentations in the first session explored current research efforts relevant to the generation of urban health metrics at global, regional and local levels. The first group work aimed to characterize the current landscape of urban health and equity metrics research in terms of gaps and areas of opportunities as well as key stakeholders.

1.1 The importance of the conceptual framework in guiding the development of metrics was stressed. A priority issue is to develop appropriate measures for the determinants of urban health and their causal effects, particularly for those that are more distal such as structural factors, as defined by existing urban health frameworks.

1.2 Substantial discussion centered on the concepts of compatibility and comparability of urban health indicators; the former relating to the ability of indicators with varying

[5] Ross, Z, Matte, T, Kitson H. *Taking the pulse of an urban world: mechanisms for characterizing urban health and urban health equity.* New York, ZevRoss Spatial Analysis, 2011.
[6] Rothenberg, R, Stauber, C, Crampton, J. *An Urban Health and Health Equity Index (UHI): problems, pitfalls, and potential.* Center of Excellence in Health Disparities, Institute of Public Health, Georgia State University, 2011.

contextual definitions to be congruent and applicable across different settings, while the latter focused on the possibility of having indicators with standardized definitions.

1.3 Overcoming challenges related to data availability and quality presented a consistent debate, highlighting efforts to make better use of routinely collected data, and to search for innovative strategies to address shortcomings, such as validation of data using direct field observation and participatory mapping of informal settlements.

1.4 Some of the critical gaps in the field of urban health research were identified as: (a) an insufficient understanding of the kind of metrics policy-makers require to effectively contribute to their decision-making, (b) poor coverage of urban populations in surveys, and (c) the lack of quality disaggregated data which would permit intra-urban analysis.

1.5 The group work identified opportunities within this field which could be pursued for future development. Recent attention paid to urban health issues and their determinants has increased awareness amongst potential stakeholders about the need for better data to inform their actions. Thus an opportunity exists to obtain political commitment and resource allocation for urban health metrics development. There is also a growing body of knowledge and technical capacity to advance research in urban health.

1.6 Key stakeholders in urban health metrics research were identified as (a) the affected urban communities themselves, (b) policy-makers at all levels—global, national, and local, as well as (c) academics, advocates, and those within civil society. The role of academic training and research programmes in ensuring the sustainability of this field of research was emphasized. Conflicts amongst stakeholders and the lack of their engagement and support were seen as potential challenges.

Assessment of existing resources for monitoring urban health and equity

The work of observatories in relation to urban health was explored during the second session. Participants shared their experiences including examples from health observatories in the cities of Barcelona (Spain), Belo Horizonte (Brazil), and London (UK), and from the WHO Global Health Observatory, UN-HABITAT's Global Urban Observatory, the Global City Indicators Facility and the European health inequalities indicators project, known as I2SARE. The second group session expanded upon the findings of one of the technical background papers[7] to discuss the strengths and weaknesses of a variety of existing data sources and systems for monitoring urban health. Attention was directed to how these data sources may be improved, especially in resource-poor environments.

2.1 The role of an observatory in housing data and in facilitating urban heath metrics research and application was discussed. Specifically, the support necessary for their

[7] Ross, Z, Matte, T, Kitson H. *Taking the pulse of an urban world: mechanisms for characterizing urban health and urban health equity.* New York, ZevRoss Spatial Analysis, 2011.

sustainability and their potential to serve as a catalyst for replication of such efforts was debated.

2.2 Concerns were expressed about the quality and representativeness of data compiled by observatories, and the system of checks and balances to ensure these fundamental characteristics. In response, experiences were shared about the selective use of administrative data and the various ways in which data procurement and quality checks are performed by observatories. Data on the determinants of health was particularly noted as difficult to obtain.

2.3 The underutilization of routinely collected data was noted as a missed opportunity, while recognizing that the availability or quality of data may be a prohibiting factor in many cases. Administrative data, in particular, should be explored for its many potential applications, and also be made transparent to improve accountability and data quality.

2.4 Several suggestions were made to enhance the data sources and mechanisms for monitoring urban health, including: (a) synergistic use of qualitative and quantitative methods, (b) improved coverage of urban samples, including informal settlements, to increase sample sizes and representativeness, (c) improving interoperability of urban data/information systems, (f) establishing more urban Demographic Surveillance Systems sites, (g) allocating resources so marginalized communities can have control over their own data collection and application, and (h) documentation of good practices.

2.5 Intersectoral cooperation was emphasized as a crucial component in developing comprehensive urban health monitoring mechanisms that capture both health outcomes and the wide range of social, economic, environmental and political determinants of health.

A summary of the discussion points about current challenges and opportunities in further developing urban health metrics is presented in Table 1.

Table 1. Summary of discussion points from Sessions One and Two on current challenges and opportunities to improve urban health metrics

Challenges	Opportunities
Political • Data collection efforts that are determined by specific political or policy-based agenda • Lack of sustained political commitment and engagement • Conflicts within stakeholder groups • Insufficient understanding of the kind of metrics that could effectively contribute to policy-making • Translation of metrics into action (policy uptake) **Structural/Logistical** • Insufficient financial resources • Weak health information systems • Limited national/local capacity to collect, analyze and utilize data • Restricted access to data (e.g. confidentiality issues) • Lack of interoperability between urban data systems **Scientific/Statistical** • Lack of disaggregated data for urban areas • Lack of adequate urban sample sizes in surveys • Underrepresentation of particular urban population segments • Limited data for the determinants of health, especially for the more distal determinants • Limited data concerning non-communicable diseases, including mental health and injuries • Limited generalisability and comparability of indicators across different cities and countries	**Political** • Increased awareness about urban health problems and their determinants among stakeholders • Momentum to increase political buy-in **Structural/Logistical** • Collaborative and inter-sectoral initiatives by international organizations • Increasing number of academic programmes in urban health training and research • Linked data and fluidity of information exchange across different urban data systems (in some cases) **Scientific/Statistical** • A growing body of relevant knowledge and expertise • Opportunities to for longitudinal analysis of the effects of various patterns of urbanization • Availability of administrative data that allows disaggregation (in some cases) • Potential for expanding urban sample sizes in upcoming surveys • Continual development and improvement in data analysis and visual presentation methods

Exploring innovations in urban health measurement

Presentations in the third session focused on the various aspects of measuring and characterizing health in cities, such as the use of global health surveys, analysis of neighborhood health effects, qualitative research, and geospatial analysis, in pursuit of innovation. The group session focused on the methodological issues of measuring urban health, and the feasibility and utility of a globally standardized urban health index.

3.1 The discussion on the composition of a global summary index to characterize urban health centered on whether it would have added value, for whom and for what purpose. While a globally comparable, standardized index might be effective in influencing international and national priorities, local practitioners may find a highly contextualized index to be more useful.

The comparability of the index, its composition, and relevance to local governments were points of contention in discussing the possibility of creating a globally standardized urban health index. Participants generally agreed with arguments presented in the technical background paper[8] about the conceptual and statistical limitations of a unitary, globally standardized, summary index of urban health and health equity.

3.2 Given the limitations of a unitary global urban health index, strong consideration was given to possible alternatives. These included a localized index that may be comparable within regions or countries; a global index comprised of standardized domains but exchangeable, or adaptable, indicators; and/or selective use of existing health indicators for global comparisons of cities. A combination of these approaches is possible.

It was agreed, however, that any summary index should not merge health outcomes with health determinants because: a) theoretically, these are separate constructs that have a cause-and-effect relationship; b) if outcomes and determinants are merged, it would not be possible to measure the hypothesized relationships between them; and c) a summary index that combines outcomes and determinants would mask the performance in each of these areas, making it difficult to interpret the implications for policy action. Thus, it was recommended that separate indices be developed to represent urban health outcomes and urban health determinants, respectively.

The development of the appropriate metrics will require a technical as well as a political consultation process. Opportunities to build upon existing initiatives or approaches were recognized, such as using WHO's Urban HEART indicators to create standardized but locally adaptable urban health indices. A summary of the pros, cons and alternatives to developing a globally standardized urban health index is presented in Table 2.

[8] Rothenberg, R, Stauber, C, Crampton, J. *An Urban Health and Health Equity Index (UHI): problems, pitfalls, and potential.* Center of Excellence in Health Disparities, Institute of Public Health, Georgia State University, 2011.

3.3 Discussions beyond the construction of an urban health index focused on the role of GIS technology and its potential to facilitate spatial analysis and presentation of urban health metrics. A simplified adaptation of this technology which would greatly reduce the usually extensive training requirement could be broadly disseminated. Substantial disaggregated spatial data relevant for an urban health analysis is supposedly available. Feasible immediate actions include basic localized mapping, as has been done in urban slums in India, or even vectorizing Google images. However, clear strategies employing a goal- or product-targeted approach should be implemented when considering dissemination of technological innovations, as previous unsuccessful approaches involving technology dissemination were noted.

3.4 Another methodological issue concerned the difficulty in longitudinal monitoring of trends for slum populations and highly mobile populations. Systematic tracking of a cohort is possible with adequate resources, but still presents a significant constraint.

Table 2. Summary of discussion points from Session Three on the pros, cons and alternative approaches to developing a globally standardized urban health index

Pros	Cons	Alternatives
• Ability to compare performance across time and geography (i.e. high external validity) • Potential power to influence priorities and garner support for urban health issues on national and international levels	• Summary measures mask performance on individual indicators comprising the index • An index encourages ranking, which can be too simplistic • Meaning and interpretation of component indicators would vary across settings, affecting the ability of the index to be truly comparable • A globally standardized index would fail to capture meaningful contextual factors (i.e. low internal validity) • An index composed of a mix of health status and determinants indicators would be impractical and difficult to interpret • Identifying key actors to maintain, monitor, and validate data would be difficult	Note: The alternatives below are **not** mutually exclusive. • Develop contextualized and standardized index at a regional or national level for between-city comparisons within those areas • Standardize the domains that comprise a global index and identify interchangeable indicators for each domain; this would achieve standardization while leaving room for local adaptation • Develop two global urban health indices: one for urban health outcomes and another for urban health determinants • Utilize an existing, globally standardized measure, such as the Healthy Life Year (HeaLY), as an alternative summary indicator of urban health

Linking urban health metrics to action

The fourth session focused on linking metrics to policy action through the engagement of stakeholders, and understanding what measures would facilitate their participation and inclusion. Examples of using metrics to encourage policy action were shared from Mexico, Finland, and India, as well as from the European Urban Health Indicator System and WHO's Urban HEART.

4.1 The importance of establishing sustainable and lasting systems for urban health monitoring that can withstand changes in political leadership and policies was emphasized, especially since such changes can be rather frequent in some settings.

4.2 Metrics are invaluable to cities to monitor their performance as they strive toward their relevant targets. Policy-makers often have great interest in gauging and comparing performance within their localities and with other areas. Presenting numbers by themselves, however, often do not motivate action; the meaning behind the numbers needs to be communicated effectively. Simple visual techniques, such as colour coding used by the Finnish national health authorities and in WHO's Urban HEART to express levels of achievement with respect to specific targets have been effective in communicating with non-experts. Making the metrics transparent and readily accessible to policy-makers, such as through an online system, can also facilitate the use of metrics in policy-making. The challenge is to produce metrics that appeal to policy-makers but are not necessarily driven by their political interests.

4.3 The kind of urban health metrics that would be relevant to policy-making depends on the intended effects. Very specific, highly contextualized measures would be useful for tailoring local programmes and policies, while comprehensive summary measures would be more effective in setting priorities and resource allocations.

4.4 The fast pace at which urbanization is taking place requires prompt development of metrics for monitoring and guiding policy actions. Enthusiasm and momentum for their development should not be lost in the pursuit of technical perfection.

Conclusions from the Meeting

Recommendations

1. **Adopt a conceptual framework of urban health,** which incorporates the determinants of health, to guide the development of metrics and the collection, analysis, and interpretation of data. Future research should refine existing frameworks.

2. **Develop an inventory of available urban data on health and its determinants** both internationally and locally. Identify opportunities to capitalize on established data sources including routine health surveys, observatories, and international urban data systems such as the Global City Indicators Facility and the European Urban Health Indicators System.

3. **Better tailor urban sampling for the entire city**, including populations that are routinely excluded, to increase comprehensiveness. Dual efforts to increase both the volume of urban sampling as well as the representativeness of the entire urban population in national and international surveys should be promoted by local and national governments and in liaison with international NGOs. The latter may involve local level recalibration and other innovative sampling techniques.

4. **Study effective observatories and explore their potential for replication.** Successful observatories should be studied to understand their role, functions, and good practices with the intention to emulate their successes. Prototypes modeled upon these lessons may be developed to promote the potential that observatories have for urban health action and reduction of health inequities.

5. **Improve transparency and quality of available data on urban health and its determinants** by using multiple sources for validation and by making data available to the public, particularly at a local level. Increasing transparency will lead to quality improvement because the data will undergo public scrutiny and data holders will be motivated to ensure data quality.

6. **Develop greater inter-operability of urban information systems** by increasing compatibility of indicators and data structure. This would expand opportunities to link data within cities or, for example, between local and global observatories. It would also help establish intersectoral urban health information systems that house indicators of health status as well as the wide array of health determinants.

7. **Pursue the development of alternative metrics for summarizing and comparing the health and health equity status of cities.** Given the limitations of a unitary global urban health index, especially for guiding local actions to reduce health inequities, the WHO Kobe Centre should explore other alternatives. One option is to develop two globally comparable urban health indices, one for health outcomes and another for health determinants, with provisions for local adaptation, such as allowing the component indicators to be context-specific. The development of the appropriate metrics will require a technical as well as a political consultation process. This could be facilitated by building upon the framework, indicators and consultation process established by WHO's Urban HEART.

8. **Expand the available toolkit of methods to improve the robustness of urban health metrics**. Innovative methods would include the synergistic use of quantitative, qualitative, and spatial data. While highly sophisticated methods and capacities are being developed, the advantages of more primitive and accessible techniques should be recognized and fully utilized (e.g. basic mapping in lieu of advanced geospatial analysis).

9. **Promote community ownership and use of existing local urban health data**. International actors and national governments should promote community ownership of data and support local capacity building in the collection, analysis, and policy translation

of data. This can help motivate the local community to effectively utilize routinely collected data, continuously improve its quality, and ensure sustainability of the process.

10. **Ensure sustainability of efforts to improve metrics for action on urban health and equity.** The WHO Kobe Centre and its partners should continue advocating improved measurement of urban health and health equity, and routine use of metrics to inform policy. This should be paired with capacity-building at the local government level to collect, analyze and utilize data on urban health. Expansion of academic training and research programmes in urban health should also be promoted; development of standards and best practices may be useful to this effect. A mechanism to enable concerned researchers and practitioners to continue an exchange of knowledge, methods and practices will also be a key to sustainability.

Next steps

- **Share the outcomes of this meeting with a broader audience.** This may be in the form of an online publication of the meeting report on the WHO Kobe Centre website, a journal publication, and/or presentations and further discussions at relevant conferences and workshops.

- **Form a working group(s) that will focus on implementing specific recommendations.** For example, a technical working group (or groups) may be formed to further pursue the development of metrics for global comparisons of cities in terms of health outcomes and health determinants.

Appendix #1: Meeting Programme

Consultation on Urban Health Metrics Research, 23-25 February 2011, Kobe, Japan

Day ONE 23 February 2011		
Time	**Item**	**Speakers**
0900 – 0920	Welcome address	Director, WKC
	Overview of meeting agenda	Chair
	Self-introduction of participants	Participants
Session ONE	**Developing international research on urban health and equity**	
0920 – 0930	1. Urban health metrics in WHO	Amit Prasad
0930 – 0940	2. Global Research Network on Urban Health Equity	Sharon Friel
0940 – 0950	3. African Population and Health Research Centre	Yohannes Kinfu
0950 – 1030	Plenary discussion: Q&A	Plenary
1030 – 1045	Coffee break	
1045 – 1145	Small group discussion on the "what" and "how" of future international research on urban health metrics	Groups
1145 – 1200	Report back to plenary	Groups
1200 – 1230	Plenary discussion on the "what" and "how" of future international research on urban health metrics	Plenary
1230 – 1400	Group photo & Lunch	
Session TWO	**Mechanisms for monitoring urban health and equity**	
1400 – 1410	1. WHO: Global Health Observatory	Megumi Kano
1410 – 1420	2. UN-HABITAT: Global Urban Observatory	Gora Mboup
1420 – 1430	3. Global City Indicators Facility	Patricia McCarney
1430 – 1500	Plenary discussion: Q&A	Plenary
1500 – 1515	Coffee break	
1515 – 1525	4. I2SARE (Health Inequalities Indicators in the Regions of Europe)	André Ochoa
1525 – 1535	5. London Health Observatory	Anne Scott

1535 – 1545	6. Barcelona Health Observatory	Carme Borrell
1545 – 1555	7. Belo Horizonte Urban Health Observatory	Waleska Texeira Caiaffa
1555 – 1630	Plenary discussion: Q&A	Plenary
1630 – 1730	Small group discussion on mechanisms for monitoring urban health and equity (discussion of Background Paper I)	Groups
1730 – 1745	Wrap-up of Day One	Chair

Day TWO
24 February 2011

Time	Item	Speakers
0900 – 0915	Review of Day One and overview of Day Two	Chair
Session TWO (continued)	**Mechanisms for monitoring urban health and equity**	
0915 – 0930	Report back to plenary from previous day's group discussion	Groups
0930 – 1030	Plenary discussion on mechanisms for monitoring urban health and equity	Plenary
1030 – 1045	Coffee break	
Session THREE	**Methodological issues in urban health metrics development**	
1045 – 1055	1. Use of global health surveys for urban health equity analysis	Somnath Chatterji
1055 – 1105	2. Measurement of neighborhood health effects	Ana Diez-Roux
1105 – 1115	3. Qualitative urban health equity research	Patricia O'Campo
1115 – 1125	4. Geospatial analysis of urban health equity	Carlos Castillo-Salgado
1125 – 1200	Plenary discussion: Q&A	Plenary
1200 – 1330	Lunch	
1330 – 1430	Small group discussion on development of an urban health index (discussion of Background Paper II)	Groups
1430 – 1445	Report back to plenary	Groups

1445 – 1545	Plenary discussion on development of an urban health index	Plenary
1545 – 1600	Coffee break	
Session FOUR	**Linking urban health metrics to action**	
1600 – 1610	1. Using metrics to improve urban health equity: India	Siddharth Aggarwal
1610 – 1620	2. Using metrics to improve urban health equity: Finland	Timo Stahl
1620 – 1630	3. Using metrics to improve urban health equity: Mexico	Asa Cristina Laurell
1630 – 1650	Plenary discussion: Q&A	
1650 – 1700	4. European Urban Health Indicator System	Arpana Verma
1700 – 1710	5. WHO's Urban HEART	Amit Prasad
1750 – 1800	Wrap-up of Day Two	Chair
1900 – 2100	*Optional: Social dinner*	

Day THREE
25 February 2011

Time	Item	Speaker(s)
0900 – 0910	Review of Day Two and Overview of Day Three	Chair
Session FIVE	**Recommendations for the way forward**	
0910 – 1010	Small group discussion on recommendations for the way forward	Groups
1010 – 1030	Report back to plenary	Groups
1030 – 1130	Plenary discussion on: a. Finalizing recommendations as a group b. Mechanisms for disseminating recommendations	Plenary
1130 – 1145	Closing remarks	Chair Director, WKC