Urban HEART aids decision-makers in planning action on inequities in health. The tool guides users through a process to identify health inequities in their city by assessing indicators on health outcomes and health determinants, and then developing actions based on the evidence generated.
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WHAT IS IN THIS MANUAL?
This Manual is a companion volume to Urban HEART. It is intended to lead you through the six steps of the Urban HEART process. The Manual provides guidance based on research evidence, best practices and past experience from cities that have already used Urban HEART.

WHO SHOULD USE THIS MANUAL?
This Manual is for teams and individuals who will play a front-line role in launching, coordinating and managing the Urban HEART process in their home cities. It may also be of interest to stakeholders and collaborators who seek an overview of the Urban HEART process. This is not a technical manual for collecting or interpreting population health data or for evaluating interventions. Data specialists, population health experts and programme evaluators should be consulted by, or included in, your Urban HEART team.

SHARE YOUR EXPERIENCE
This Manual is based on the experiences of Urban HEART pilot cities around the world. In every city that uses Urban HEART, the process will be unique, and new learning will emerge. It is important to collect and share these new learnings, and to update the Manual regularly. An online Urban HEART resource centre is being developed at http://www.who.or.jp/urbanheart. The site will provide information and advice related to implementing Urban HEART. To share your Urban HEART experience, or if you have questions, write to urbanheart@wkc.who.int.

WHAT IS URBAN HEART?
The Urban Health Equity Assessment and Response Tool (Urban HEART) is a decision-support tool to identify and reduce health inequities in cities. Urban HEART enables local communities, programme managers, and municipal and national authorities to:

- better understand the unequal health determinants, unequal health risks and unequal health outcomes faced by people belonging to different socioeconomic groups within a city (or across cities);
- use evidence when advocating and planning health equity interventions;
- participate in intersectoral collaborative action for health equity;
- apply a health equity lens in policy-making and resource allocation decisions.

The Urban Health Equity Assessment and Response Tool (Urban HEART) User Manual is a collective effort and has been jointly developed by the World Health Organization (WHO) Centre for Health Development, Kobe (Japan), in collaboration with regional offices of WHO, and city and national officials from across the world. Inputs from the teams in cities who pilot-tested the tool have been critical in the development of the Urban HEART User Manual:

- Guarulhos (Brazil)
- Jakarta, Denpasar (Indonesia)
- Tehran (Islamic Republic of Iran)
- Nakuru (Kenya)
- State of Sarawak (Malaysia)
- Mexico City (Mexico)
- Ulaanbaatar (Mongolia)
- Davao, Naga, Olongapo, Tacloban, Taguig, Zamboanga (Philippines)
- Colombo (Sri Lanka)
- Ho Chi Minh City (Viet Nam).

In particular, we would like to acknowledge the role of community groups in various pilot sites for their enthusiasm and leadership in building broad-based support for applying the tool to address health inequities in their cities. Their inputs and emphasis on a participatory approach is a key building block of Urban HEART.

Acknowledgement is also due to the Centre for Research on Inner City Health (Toronto, Canada) for their contribution in writing the User Manual based on inputs from various stakeholders.
SIX STEPS TO IMPLEMENTING URBAN HEART: AN OVERVIEW

There are six steps to follow in the Urban HEART process. The steps are designed to be followed in order. However, some steps may need to be revisited and repeated in the course of an Urban HEART cycle. The cycle itself should be repeated and is intended to expand cumulatively – Urban HEART is a continuous process.

In this Manual, each step is organized under the following headings:

Why do it?
What to do?
Who should be involved?
What resources are needed?
What knowledge and skills are needed?
How much time will it take?
What are the outcomes?
Tips and advice.

Checklist (use the checklist provided at the end of each step to keep track of your progress. If you have not achieved all of your goals for this step, use the checklist as a reminder to address these outstanding goals in subsequent steps, or to return to this step later).

<table>
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**STEP 1**
Build an inclusive team
- The goal is to build political commitment to pursue a health equity agenda for your city. Building an inclusive team may be the most time-consuming step in the Urban HEART process, yet it may also be the most important step. Core activities include partnership building, education and advocacy.
- Obtain buy-in from influential champions.
- Raise awareness in other sectors about the importance and relevance of Urban HEART.
- Form a core team of individuals who will have dedicated time to implement Urban HEART. Promote the sustainability of the use of the tool by integrating Urban HEART into existing structures and responsibilities.

**STEP 2**
Define your local indicator set and benchmarks
- A health equity indicator set will enable the team to effectively and efficiently collect information on the major health equity issues facing your city.
- Adopt the Urban HEART core indicators. These have been vetted as valid and reliable health equity indicators. You can also select other indicators to address special issues in your city. Make these choices in consultation with stakeholders.
- Identify the best disaggregation variables to assess inequalities.
- Determine benchmarks and targets for evaluating performance on the indicators.
- Find a data source for each indicator. You will need data from a range of policy sectors.

**STEP 3**
Assemble relevant and valid data
- Urban HEART should rely as much as possible on use of available datasets and should not require extensive new data collection or surveys. Data sharing may be politically sensitive. Use contacts on your intersectoral team to support the process.
- Assess the quality and validity of available datasets, in consultation with data experts and communities. Take steps to choose the best quality data and to manage data quality problems.
- Negotiate formal data-sharing agreements with data custodians and set up a repository or server to hold the collected datasets. You may need legal and IT advice. Prepare the data for analysis.

**STEP 4**
Generate evidence
- Using your indicator set, the data you have assembled and simple charting and graphing software, the team can produce easy-to-read charts (the MATRIX and the MONITOR) to illustrate health inequities in your city.
- Start by developing the MATRIX. Use the MATRIX to identify priority indicators that should also be reviewed through the MONITOR.
- Be sure to register numeric results for each indicator, in addition to using colour codes. This will help stakeholders to understand the relative urgency of different problems.

**STEP 5**
Assess and prioritize health equity gaps and gradients
- This is a highly critical stage whereby all stakeholders participate in identifying priority issues by assessing the Urban HEART evidence. Although the MATRIX and MONITOR provide quantitative results, this phase should include qualitative assessment as well.
- Ensure that stakeholders can interpret the charts. Focus on numeric results as well as the colour codes.
- Facilitate careful and deliberative discussion. There are several strategies for reviewing the charts, depending on stakeholders’ concerns. Focus on trends and pockets of deep inequities, understanding the causes and consequences of inequities (using qualitative approaches).
- Prioritize key equity problems.

**STEP 6**
Identify the best response
- Once you have identified the equity issues needing attention, the next step is to identify the appropriate response. This step should be highly consultative, involving relevant policy sectors and communities. The goal is to develop an evidence-based plan for action that will be persuasive to decision-makers and can be adopted and implemented.
- Draw upon the Urban HEART menu of strategy packages and interventions for ideas. These have been tested in other cities for their effectiveness.
- Assess the relative strengths of potential interventions. Consider a wide range of factors, including potential impacts on equity, community preferences, available resources and alignment with existing government priorities.
- Finalize your response plan. The Urban HEART process will help you ensure that the plan is evidence based, feasible, relevant and broadly supported.
STEP 1: BUILD AN INCLUSIVE TEAM

WHAT TO DO?

Draw a “network map”. Getting started and knowing who to engage can be a challenge. You may need to begin by conducting an environmental scan or stakeholder analysis to identify people who should join the team. In Paranaque City, Philippines, the start-up group held brainstorming sessions to identify potential stakeholders. The result was a network map of the many agencies, departments and communities relevant for Urban HEART, and a plan for contacting these groups.

Mobilize influential champions. Communicate with, and meet as often as needed with, influential decision-makers (and “gatekeepers”) to secure their support and to prepare them to receive the results of data analysis later on. When national and local executives (e.g. city mayor, town clerk, district council chiefs or other types of officials) become champions for Urban HEART, they can encourage or mandate their agencies to get involved. City council adoption of Urban HEART has been an important milestone in pilot cities and stimulated more activity. Use the Urban HEART policy brief (Annex I) and other educational materials that are available at http://www.who.or.jp/urbanheart.

Educate. Many groups will be unfamiliar with concepts such as the “social determinants of health” or “health equity”. The first step in cultivating champions and a team is to ensure that potential stakeholders understand the issues. Emphasize opportunities for collaboration. It is important not to alienate groups whose participation may be needed. Educational materials are available at the Urban HEART website. You can tailor these materials for different groups and offer learning workshops and consultations.

Look for synergies to promote sustainability. Competing responsibilities is one of the biggest challenges to starting and sustaining Urban HEART. Pilot cities recommend integrating Urban HEART within established programmes, policy agendas, timelines, workplaces and job descriptions. Be explicit with all potential stakeholders that Urban HEART is a planning tool that can be adopted by existing organizations and programmes. It is not intended to be a new programme requiring substantial new resources.

Use informal networks. In addition to the formal route, team builders in pilot cities used their personal contacts to identify participants for Urban HEART. In some cities, third-party agencies or centralized statistics organizations have provided access to relevant datasets, when an individual policy contact is not available.

Create terms of reference. Writing this document together will be an important way to build commitment and knowledge in the team. It will also help to identify potential synergies with existing roles and responsibilities. Clearly describe the Urban HEART plan, and define concrete measures of success, timelines and the roles and goals for working together. Ensure that roles for affected communities are expressed in the terms of reference, including the strategies you will pursue to ensure their meaningful participation.

Organize the team efficiently. You may decide to establish small subteams to focus on particular issues or policy domains. This approach can speed up your activity and ensure that you are using the expertise of team members efficiently. A steering committee can coordinate the activities of the subteams.

Document your process. You can use this information for evaluation and monitoring, and to advise future Urban HEART cities about how to get started.

WHY DO IT?

Urban HEART requires (and fosters) strong coordination among diverse policy sectors, levels of government and communities to address health inequities. Although it is likely that a health agency may first become interested in using Urban HEART (or may become the focal point for the process), it is essential to build partnerships with others as early as possible. Getting an early start on inclusive team building during this pre-assessment phase is both practical and strategic. In the practical sense, you will need data from a wide range of sectors and levels of government to analyse health inequities in your city. Strategically, an inclusive approach helps build political commitment. It is more likely that agencies and communities will take ownership for responding to problems if they have participated throughout the process and have played a key role in identifying problems. While team building may be the most time-consuming step in the process, it may also be your most important step. Creating an inclusive team sets the foundation for the productive implementation of Urban HEART.
WHAT ARE THE OUTCOMES?

A network of agencies and individuals who are informed and ready to participate in Urban HEART (in varying capacities).

Data-sharing commitment and authorizations from at least some of the relevant stakeholder groups, agencies and communities to begin data sharing.

Agreements to consider resource sharing or resource allocations.

Endorsement of Urban HEART by one or more influential champions.

Terms of reference or similar document.

Momentum to proceed.

WHO SHOULD BE INVOLVED?

Social, economic and health policy stakeholders who have authority to share data. Try to engage education, police and law enforcement, sanitation and waste removal, roads and traffic management, housing and finance agencies as well as centralized agencies that have access to diverse datasets. If you expect that new funding will be required for response strategies, it is important to engage the finance departments early on.

All relevant levels of government planning, e.g. national, provincial, municipal and local district authorities.

Community leaders, including elected officials, grass-roots organizations and nongovernmental organizations (NGOs) (particularly those representing citizens groups, women’s organizations, environmental organizations and literacy or education organizations, and advocacy agencies for marginalized or vulnerable populations in the city, in addition to health groups). Recruit participants who can promote community empowerment.

People who have experience analysing large datasets. These individuals may come from participating agencies or universities.

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WHAT RESOURCES ARE NEEDED?

A realistic budget. Include costs for meeting spaces, travel, meals, stipends, materials and personnel. Aim to integrate most costs of Urban HEART within existing programmes. You may need to cover costs for new data analysis. Seek out funding from government agencies, NGOs and foundations.

Debriefing documents and educational materials. A policy brief is included in Annex I. You can tailor it to your context and translate it. You can also use the final report of the Commission on Social Determinants of Health.

Access to relevant stakeholders.

Terms of reference template. A sample is included in Annex II.

Time to meet with diverse individuals and groups to explain Urban HEART and encourage their participation.

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WHAT KNOWLEDGE AND SKILLS ARE NEEDED?

Knowledge of the health equity issues likely to be affecting residents in your city.

Strong knowledge about how to implement Urban HEART. To learn more about Urban HEART, read the Tool and Manual carefully, consult with your local WHO office, and get in touch with individuals who have led the Urban HEART process in other cities. Visit Urban HEART online for more information: http://www.who.int/urbanheart.

Presentation skills. You will need these skills to explain the Urban HEART process and its relevance to potential stakeholders.

Strategic communication skills, to show links between Urban HEART and stakeholders’ current priorities.

Leadership, facilitation and community-organizing skills. Use these skills to coordinate diverse groups and to foster a shared vision among groups with different priorities, or a history of unproductive relationships.

Documentation skills, to record your process and develop terms of reference for the team.

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HOW MUCH TIME WILL IT TAKE?

A committed Urban HEART team may take a long time to develop. Some cities have required 6–12 months to build a team. It is also important to recognize that team building is a continuous process. Sustain and support the team. The guidelines in this section should provide you with ideas. Review your terms of reference regularly, and refresh them if required. Review the membership of the team. When people leave, take efforts to refill their positions carefully, so that the team remains relevant and effective.

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Agreements to consider resource sharing or resource allocations.

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Terms of reference or similar document.

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Terms of reference or similar document.

Momentum to proceed.
WHO IS ON THE TEAM?

Pilot cities recommend that teams prioritize three types of inclusion:

- **Intersectoral inclusion.** Urban HEART emphasizes the social determinants of health. Many Urban HEART policy domains (e.g. social and human development, economic issues and physical infrastructure) are not the direct responsibility of health agencies. A successful Urban HEART initiative needs to engage sectors beyond health in order to understand the issues and plan effective responses.

- **Intergovernmental inclusion.** Urban HEART focuses on city-level and district-level health inequities. Yet, many of these inequities are the consequence of policies and programmes managed by higher levels of government. Engaging decision-makers from national or provincial government will make it easier to access relevant data and to advocate effective responses. Cities in Brazil, Kenya, Mongolia and the Philippines have all benefited from central government support for Urban HEART.

- **Community inclusion.** The core principles of Urban HEART are to redress the effects of social exclusion and empower local communities to claim their rights to good health. Every step of the Urban HEART process requires the active participation of affected communities. Ensure the team is well connected to citizen’s groups and other types of groups that represent marginalized and vulnerable populations in the city, including women, those living in informal or slum settlements, migrant workers and homeless people. Avoid token inclusion. Community engagement with Urban HEART must be real and meaningful. Empower community groups to participate, by providing relevant education and resources. Write your principles and strategies for supporting community involvement directly into your terms of reference.

MAKE THE MOST OF LEARNING WORKSHOPS

Here are some tips from Urban HEART pilot cities:

- **Involve local community leaders and decision-makers in workshop facilitation.**
- **Be sure to explain the social determinants of health, and emphasize that health inequities are systematic and unjust.** Use educational materials, tailored to your audience and local context.
- **Explain the inclusive approach and goals of the Urban HEART process.**
- **Discuss why stakeholders’ participation is needed and how Urban HEART will help them achieve their own goals.** This is particularly important when engaging sectors outside health.
- **The setting for workshops can be important.** Bring the workshop to your stakeholders. An outreach approach will help show stakeholders that Urban HEART is designed for them.
- **Cover the costs of participants’ transportation and meals.**
- **Be aware of social, cultural or economic conditions that may inhibit the full participation of some groups, such as women or migrant workers.** Take efforts to ensure their perspectives are heard. For example, you may decide to hold special sessions for women only.

TIPS

**Look for synergies.** A relevant, intersectoral team may already exist, which could adopt the Urban HEART process. In Ulaanbaatar, Mongolia, Urban HEART was launched by the WHO Healthy Cities Committee. This helped raise the profile of Urban HEART and encouraged central government participation.

**Be prepared for resistance.** The causes of health inequities in cities are complex. It may be difficult for organizations that do not have a direct health care mandate, such as labour, utilities or police, to see a role for themselves in Urban HEART. Engaging groups that do not see the relevance of health equity to their work may take longer than any of the other steps in the Urban HEART process, but it is essential.

**Be credible.** When you meet with senior decision-makers, bring along prominent officials from your regional WHO office, or other influential advocates who can convey the importance and credibility of Urban HEART.

**Translate and tailor** debriefing materials to the needs of your stakeholders.

**Think about the size of the team.** The exact size and composition of the team will depend on your unique context and cannot be prescribed in advance. As a rule of thumb, the team should be as broad as necessary to achieve your goals, but not so broad as to become irrelevant or difficult to coordinate. A team that is well connected to the range of relevant stakeholders is optimal. In some cases, it may be appropriate for an agency to share data, without participating actively on the team. Aim to build a team of 10–20 participants.

**Cultivate demand.** Urban HEART works best when representatives from affected communities and relevant sectors want the process and believe that Urban HEART is needed. You can help cultivate demand early on by explaining the social determinants of health to stakeholders. Later, you can use Urban HEART data analyses to demonstrate health inequities faced by particular communities and equip them to advocate change.

**Prepare for succession.** Over time, you may lose individual participants and champions (for example, due to staff turnover or elections). Work to integrate Urban HEART into organizational systems and formal job descriptions to minimize the effects of personnel changes. Be prepared to continue to advocate Urban HEART with political incumbents. The demand you have cultivated among other participants, communities and the media can influence incoming officials to support Urban HEART.

**Remember that team building is an ongoing process.** The team does not need to have everyone on board in order to get started. Pilot cities, such as Ho Chi Minh City, Viet Nam, and Nakuru, Kenya, attracted new participants by sharing interim Urban HEART results.

**Keep stakeholders informed.** Ideally the team will include representatives from all relevant stakeholder groups. Use these contacts to ensure that stakeholders are regularly updated about your activities throughout the Urban HEART process. This will ensure that stakeholders do not forget about Urban HEART and will prepare them to participate in steps 5 and 6 – reviewing and responding to evidence.

CHECKLIST

- Do you have an influential champion or champions?
- Have you consulted with relevant stakeholders and educated them about Urban HEART?
- Have you recruited participants from various policy sectors, levels of government and local communities?
- Do you have gender balance on the team, and are women empowered to contribute equitably?
- Have you drafted a terms of reference?
- Have you thought about sustainability and succession?
- Have you documented the team-building process?
STEP 2: DEFINE YOUR LOCAL INDICATOR SET AND BENCHMARKS

WHY DO IT?
Now, it is time for the team to decide which health equity issues to look at in your city and define the set of indicators that will best represent these issues. An indicator is a key measure that can represent what is happening in a complex environment. The value of a good indicator is its efficiency: it enables us to measure what is important, without having to measure everything. Urban HEART offers a menu of health equity indicators, grouped by policy domains and health factors. These indicators have been tested in pilot cities and validated by a WHO Advisory Group. You should adopt all 12 Urban HEART core indicators and consider using additional indicators to address special issues in your city.

WHAT TO DO?

Review how health, social and economic indicators can reveal health inequities. Ensure that team members have a strong understanding of the social determinants of health and the purpose of disaggregating data to assess if health outcomes and opportunities are distributed fairly across different groups and regions in the city. You may want to consult with researchers or hold another learning workshop.

Consult broadly to identify local health equity concerns in your city. Consult with team members, and with affected communities and decision-makers, to better understand their health equity concerns.

Choose indicators to represent stakeholders’ health equity concerns. Review and select from the full list of Urban HEART indicators, which is available in Annex III. Try to include all 12 Urban HEART core indicators in your final set, to ensure that your results are comprehensive (i.e., they address all major policy domains) and can be compared with other sites. Use available proxy indicators if the core indicators are not available. Prioritize indicators that can be readily measured using available data. You may also want to include non-core indicators that are particularly relevant for your context.

Identify appropriate disaggregation variables for the indicators, based on your consultations with stakeholders, and in light of recommendations in the indicator list (see below, “About disaggregation”).

Identify available data sources for these indicators. Use the team members’ networks to create a list of relevant data sources. A brainstorming workshop to identify data sources could be valuable. For each data source, take note of the disaggregation variables (e.g., age, gender, income, education, geographical area) that are also contained in the data. Flag the indicators that would require collection of new data through surveys.

Identify relevant benchmarks and performance targets for each of the indicators. During the assessment phase, you will compare local performance against these targets. You may choose to use Millennium Development Goals (MDGs) or benchmarks that have been announced by national or local government.

Organize the team efficiently. You may decide to establish small subteams to focus on particular issues or policy domains. This approach can speed up your activity and ensure that you are using the expertise of team members efficiently. A steering committee can coordinate the activities of the subteams.

Document your process. You can use this information for evaluation and monitoring, and to advise future Urban HEART cities about how to get started.
WHAT SHOULD BE INVOLVED?
Team members with expertise in health and in the four additional policy domains (i.e. physical environment and infrastructure, social and human development, economics, and governance). Stakeholders from local communities and agencies. Relevant data-holding agencies.

WHAT RESOURCES ARE NEEDED?
Urban HEART indicator list (see Annex III).

HOW MUCH TIME WILL IT TAKE?
You should estimate two to four team meetings to finalize your indicator set.

WHAT KNOWLEDGE AND SKILLS ARE NEEDED?
- Knowledge of population health indicators, and the four policy domains and their associated indicators.
- Knowledge of relevant administrative data collection systems and other available data sources.
- Knowledge of Urban HEART initiatives elsewhere. It may be helpful to align your indicator sets with other cities to enable cross-city comparisons.
- Strong leadership skills to guide the team towards consensus on a feasible, relevant indicator set.

TIPS
Align indicators with existing priorities and programmes. This will enhance the relevance of Urban HEART for decision-making and can encourage the spread of Urban HEART. For example, in the Philippines, many cities are now aligning their Urban HEART indicator set with nationally mandated citywide budget systems. In Mexico City, the team chose indicators reflecting national health priorities, including child obesity detection, diabetes and tobacco control.

Customize indicators if necessary. You may decide to customize indicators to be more actionable or relevant to local priorities. For example, Ho Chi Minh City, Viet Nam, added seven additional diseases for the core indicator on child vaccination coverage because preventive care programmes for those diseases were a national priority. The team knew that decision-makers would probably take action around those indicators if inequities were revealed. In Tehran, Islamic Republic of Iran, the team added indicators related to nutrition, mental health and social capital in light of local priorities.

Use the team's expertise. In Ulaanbaatar, Mongolia, the team divided itself into subcommittees to select indicators. Experts in each policy domain made decisions about appropriate indicators and datasets. This increased the pace of work, maximized the value of participants' knowledge and kept people engaged.

Keep the size of your indicator set manageable. Indicator sets will vary in size and scope. In the Philippines, the national government will soon require all cities to measure 26 indicators. This is a very large set but there is a plan to use all the data for national tracking and planning. For a city pursuing Urban HEART on its own, use of such a large indicator set might not be justified. In contrast, other cities have limited their analysis to about 15 indicators.

Be creative about potential health data sources. For example, Mexico City linked health and taxation data to generate more information.

WHAT ARE THE OUTCOMES?
An indicator set that addresses local priorities and national or international targets for health and social development.

A set that is compatible with existing information systems.

The Urban HEART team is ready to start assembling relevant data.

CHECKLIST
- Relevance and inclusiveness: Do the indicators capture issues of concern to local decision-makers and communities?
- Feasibility: Are data already available to measure the indicator, or will you need to conduct new surveys? Where possible, choose indicators that can be measured using available data.
- Comparability with other sites or targets: Do the indicators address national or regional benchmarks and targets? Are the indicators aligned with Urban HEART initiatives in comparable cities?
- Comparability over time: Have you selected indicators that are measured at regular intervals and permit comparisons over time?
- Efficiency: Does each indicator address a unique aspect of city performance on health equity, or do you have redundancies (i.e. multiple indicators representing the same issue)?

SELECTING BENCHMARKS AND TARGETS
Choosing the right benchmarks and targets is one of the most important decisions the team will make, because these are the standards and goals against which you will measure performance in your cities and neighbourhoods. You may find that different performance benchmarks or targets are available for a particular indicator. For example, you could compare local infant mortality rates against the city average, the national average, a national goal or the MDG. Some benchmarks may be more relevant than others (such as city averages, rather than national averages that include rural data). Choose the benchmark that is most relevant for your population and that has the greatest political resonance. Meaningful comparisons will capture more attention from government, the media and your local communities.

ABOUT DISAGGREGATION
Aggregated data show the average result for the whole population. When data are disaggregated, average results for specific groups of people or specific risk factors (e.g. gender groups, income groups, ethnic groups or neighbourhoods) are revealed. This is the method used to examine potential inequities. For example, you might look to see if educational outcomes are different for males and females, if access to clean water varies between neighbourhoods or if tuberculosis rates are linked to income.

In many cities, area-level disaggregation (e.g. comparing outcomes in different neighbourhoods or districts) will be feasible because geographical information is often collected in administrative datasets. However, other important attributes (such as gender, age, education or income) are often unavailable and information about the poorest populations (e.g. the homeless and migrant workers) is often left out of official administrative statistics. Information about these population characteristics should be collected in any new surveys conducted for Urban HEART. Urban HEART teams can advocate more comprehensive data collection by administrators.
**STEP 3: ASSEMBLE RELEVANT AND VALID DATA**

**WHY DO IT?**

Urban HEART should rely as much as possible on use of existing, available datasets for your city from diverse policy sectors. Extensive new data collection is often time consuming, financially burdensome and not sustainable. Teams that emphasize new surveys may lose momentum before reaching the important assessment and response phases. In contrast, data sharing can foster intersectoral responsibility for health and promote cooperative action later on.

**WHAT TO DO?**

- **Assess the quality and validity of data sources.** Consult with data experts and communities to assess the quality and validity of your data sources. The team should strive to use the best available data for Urban HEART, recognizing that all datasets will have some quality problems. You may not notice data problems or anomalies until you analyse the data at step 4. If you encounter very significant problems, look to see if alternative data sources are available.

- **Negotiate formal data-sharing agreements.** Where possible, use established models or templates. Legal review of agreements may be required.

- **Set up a data-sharing repository.** This can be used to house and analyse the datasets you will use for Urban HEART. You may decide to establish an online, password-protected site, or use a server at a participating agency.

- **Conduct general database management.** This includes data cleaning, aggregation and de-identification to facilitate linkages and comparisons. This work should be done by a skilled data manager, ideally from a participating agency.

- **Conduct or commission new surveys, if necessary.** Conducting new surveys violates a basic principle of Urban HEART. However, it may be the only short-term option in cities where relevant data do not exist. For example, some pilot cities found that data for social and human development indicators (e.g. education, smoking) required new surveys. Work with experienced researchers to ensure your survey methods are sound and will be inclusive of marginalized populations. Be sure to advocate the future inclusion of these new data elements in routinely collected administrative data.

- **Identify relevant benchmarks and performance targets for each of the indicators.** During the assessment phase, you will compare local performance against these targets. You may choose to use Millennium Development Goals (MDGs) or benchmarks that have been announced by national or local government.

- **Organize the team efficiently.** You may decide to establish small subteams to focus on particular issues or policy domains. This approach can speed up your activity and ensure that you are using the expertise of team members efficiently. A steering committee can coordinate the activities of the subteams.

- **Document your process.** You can use this information for evaluation and monitoring, and to advise future Urban HEART cities about how to get started.
WHO SHOULD BE INVOLVED?
People who can provide leadership concerning data quality and validity assessments, data management and epidemiological methods.
Data custodians from relevant agencies who have the authority to share data.
Survey research experts, if you plan to conduct a new survey.

WHAT RESOURCES ARE NEEDED?
Funding or in-kind support to establish and maintain data-sharing infrastructure or a central repository.
Access to datasets from central agencies or diverse policy sectors.
Survey research funding, if necessary.

WHAT KNOWLEDGE AND SKILLS ARE NEEDED?
• Knowledge of existing, relevant datasets.
• Large dataset management skills (e.g. data quality assessment, dataset cleaning, linking). These skills may be available within data-holding agencies, and health research centres in universities.
• Negotiation and facilitation skills.
• Legal help to review data-sharing agreements.
• Survey research expertise. Consult local academics.

HOW MUCH TIME WILL IT TAKE?
Initial data-sharing agreements may be developed rapidly and informally, especially if they are built upon pre-existing relationships. Setting up a data-sharing infrastructure should be considered an ongoing, collaborative process. Validating and processing data can take three to five months with dedicated staff, depending on the number and size of datasets and the extent to which they were previously processed. Face-to-face, mail-in or telephone surveys can require up to one year to finish. Remember that some populations may face literacy barriers or lack telephones. Make sure your survey methods are appropriate for your population. Steps for conducting a survey include survey design, field implementation, and data input and analysis.

WHAT ARE THE OUTCOMES?
Relationships for information sharing across sectors and communities.
An initial infrastructure for data sharing.
Standards for data cleaning and validation.
Clean, validated data on your local indicator set.
The team is ready to assess local health inequities.

TIPS
Start early. Start small. You need not wait for all datasets to be assembled before you proceed. While step 3 is still ongoing, select an easily obtainable dataset and jump forward to analysis (step 4). Share these early results with current and potential partners to review data quality and to demonstrate the kind of powerful evidence that Urban HEART can produce. In Nakuru, Kenya, the team shared early results in a technical peer review. This consultation helped the team identify data gaps and make corrections. Seeing early results can persuade doubtful agencies to get involved and lend their datasets to Urban HEART.

Engage communities in data checking. In Davao City, Philippines, local communities noticed that summary statistics for water quality did not reflect the real water situation in some barangays (city subdistricts).

Data sharing may be politically sensitive. Some service providers are not permitted to share their datasets directly with other agencies. An approach that has worked for some cities is to establish a health data observatory that is maintained by a neutral third party (e.g. a university) or by team members working in transparent partnership. Providing examples of these approaches and consulting with Urban HEART cities (such as Tehran) that have established health observatories may be helpful in persuading potential data holders to participate in Urban HEART.

Consider aggregating at the census tract level. Different data-holding agencies will collect information at different aggregation levels. For example, data may be collected at the individual level (e.g. health service utilization), place of residence level (e.g. utilities usage), street block level (e.g. clean water access) or census tract level (e.g. income). In some cities, census tract-level aggregation is the best option – it can enable meaningful analysis of inequities, and does not violate privacy laws.

Be inclusive. Over time, other data holders may become interested in sharing their information. An inclusive approach to accepting datasets (even if these do not map directly to the team’s current assessment priorities) will help to generate more robust population health data about your city, and create more opportunities for innovative responses. It will also help to support intersectoral collaboration and community participation.

Plan for long-term data sharing. Sharing, housing and analysing datasets for Urban HEART should be considered a long-term commitment, rather than a one-off project. Costs can be reduced or offset by integrating Urban HEART data management within the existing responsibilities of an Urban HEART partner, for example the public health department.

Your data situation will be unique. Some cities, for example Ho Chi Minh City, Viet Nam, have good local data administration systems. Others, like Jakarta, Indonesia, have access to very high quality national surveys and national data repositories. These teams assembled data quickly and relatively easily. Other cities may have weaker data systems. In some cities, for example Mexico City, high-quality data are regularly collected but the data sources are dispersed across government departments. The team needed extra time to track down and consolidate relevant data.

Engage communities in data collection. If you have to conduct a survey, then try to use participatory approaches that directly involve community members in writing survey questions, recruiting participants and collecting data. This approach is likely to improve survey response rates and the quality of the responses. In Tehran, Islamic Republic of Iran, the Urban HEART team undertook a major new household survey of health and social development indicators. This has led to many new opportunities for data analysis.
CHECKLIST

- Have you discussed obstacles to and solutions for data sharing?
- Have you selected datasets that can be disaggregated by socioeconomic groups or by neighbourhoods, etc.?
- Have you developed data standards and common units of disaggregation?
- Have you performed data quality and validity checks?
- Have you conducted an early demonstration project with a few, easily obtainable datasets, and shared these early results with potential stakeholders and communities? Use these sessions to check for face validity of data, and to encourage further data sharing.
- Do you have a server or a website to house partners’ datasets safely?

DATA QUALITY ISSUES

These data quality issues may require special attention:

**When data are unavailable for important indicators.** Some Urban HEART indicators point to issues that fall between areas of jurisdictional responsibility. Domestic violence, tobacco use among young people and women’s control of earned income are some examples. These can be the most difficult indicators to measure because administrators do not regularly collect data about them. Depending on the importance of these indicators for your city, you may decide to conduct a new survey that includes these items.

**When disaggregation variables are missing.** Many teams will find that important disaggregation variables (such as gender, education or income level) are not contained in routinely collected data. The options here are to conduct new surveys, combine existing datasets (data linkage) or use proxy variables to recover the missing information. Before undertaking new surveys, check to see if data linkage or use of proxies could produce the information that you need. These approaches could be more efficient than conducting new surveys. Note: Many teams have found that area-level disaggregation was not available for the indicator “life expectancy at birth” – because the data are collected at the national level.

**When you encounter underreporting.** The team may find systematic differences in data quality or data coverage for some population groups or city districts (especially informal settlements and slums). This problem is called underreporting. Underreporting is itself a serious equity problem that the Urban HEART process can shed light on. As Urban HEART focuses on health inequities, information about disadvantaged neighbourhoods and groups is essential. If the team encounters underreporting, you have several options to consider. You may augment missing quantitative data with qualitative information, conduct new surveys or use proxy variables to generate the information you need. Skilled data analysts or researchers can provide guidance about appropriate strategies. Also take this opportunity to advocate better data collection in your city.

**When multiple data sources are available for the same indicator.** Learn as much as you can about each source before choosing between them. Which dataset has the best quality and coverage? Which is most current? Do researchers prefer one set over another? Why? You may want to run some simple analyses using the different datasets to compare results. Do the different data sources lead to different conclusions about an indicator? If so, you will need to verify which dataset is most accurate. Consult with a data expert on appropriate techniques and discuss the face validity of the data with the local community.

**When data are collected at different intervals.** Data obtained from different agencies may not be linkable because the information was collected at different points in time. Work with a skilled data analyst or researcher (such as an epidemiologist) to address this challenge.
STEP 4: GENERATE EVIDENCE

WHY DO IT?

Urban HEART enables stakeholders to see evidence of health inequities in cities and use evidence to plan a response. The purpose of step 4 is to generate the evidence. This is the beginning of the Urban HEART assessment phase. Using your indicator set, the data you have assembled and simple charting and graphing software, the team can produce easy-to-read charts and graphs (the MATRIX and MONITOR) illustrating health inequities in your city. These will reveal the types of health equity problems that are most (and least) pronounced in your city, and who is most (and least) affected. The MONITOR can also show equity trends over time.

WHAT TO DO?

- **Use simple charting and graphing software.** You may want to use Microsoft Excel.
- **Start with the MATRIX.** Follow the instructions for inputting your data (including benchmarks) into the MATRIX. Technical advice is available at the back of this Manual. See Annex IV.
- **Aim to produce multiple test versions of the MATRIX,** so that you can look for trends and patterns using different variables. You should produce a MATRIX that compares all city neighbourhoods or census tracts (in columns) and all core indicators (in rows).
- **Be sure to show numeric results for each indicator, in addition to the colour codes.** This will help stakeholders to understand the urgency of problems (e.g. “How red is the red?”). It will also help to identify at-risk areas or groups (e.g. “Is the yellow indicator almost green, or is it closer to red?”).
- **Check your results for accuracy.** If you see obvious anomalies, review the quality of your data source. You may need to correct data, or use a different data source. You will have additional opportunities to validate the data at step 5, when you review the results with stakeholders.
- **Produce the MONITOR.** Later, you will want to input data (including benchmarks) into the MONITOR. Technical advice for producing the MONITOR is available in Annex V.
WHO SHOULD BE INVOLVED?
Technical staff to produce the charts.
Other team members should review the charts for anomalies.

HOW MUCH TIME WILL IT TAKE?
After the data have been assembled, applying the MATRIX and MONITOR tools should be a quick task for an experienced technician – about one week. Someone less familiar with graphing software may take a little longer for this step.

WHAT RESOURCES ARE NEEDED?
• Charting and graphing software (e.g. Microsoft Excel).
• Local data on selected indicators and disaggregation variables. You will need these data to populate the MATRIX and MONITOR charts.
• Benchmarks data. You will need these data to apply colour codes to the MATRIX and MONITOR.
• Technical instructions for creating the MATRIX and MONITOR. See Annex IV and Annex V.
• Technical staff to produce the MATRIX and MONITOR.

WHAT KNOWLEDGE AND SKILLS ARE NEEDED?
Technical skills. Creation of the MATRIX and MONITOR can be managed by anyone who has some experience using spreadsheet or charting software to manage simple calculations. However, people who have training in statistics and epidemiology will be valuable additions to the team.

WHAT ARE THE OUTCOMES?
A completed MATRIX chart that can be shown to decision-makers and communities to better understand priority equity gaps in your city (or between cities).
A completed MONITOR that can be used by planners to track performance of indicators over time.
The team has produced valuable evidence about health equity problems that will be easy for stakeholders to grasp and use.

TIPS
Produce charts for all areas of your city. Do not limit your analysis to the richest or poorest areas. This way, you can generate strong evidence about overall health status, health equity gradients and health equity gaps. You may discover inequities that you did not know about.

Share MATRIX results first. You may want to wait to populate the MONITOR until you have shared the results of the MATRIX (step 5). Stakeholders can help the team select priority indicators to review against benchmarks. Then you can return to step 4 to produce the MONITOR.

Quantify “How red is red”. In the MATRIX, include actual numbers as well as colour codes. Numbers will help reviewers understand the magnitude of inequities.

CHECKLIST
• Have you reviewed the technical instructions to produce an accurate MATRIX and MONITOR?
• Have you re-evaluated data quality wherever you see unexpected results in the MATRIX or MONITOR?
• Have you used the MATRIX results to help plan the MONITOR?

THE MATRIX AND THE MONITOR
Urban HEART offers two types of visual tools for understanding equity data.

The MATRIX is a chart. It shows how different regions or groups in your city are faring on all of the indicators in each policy domain at a given point in time. It can also be used to compare different cities. It does not track changes over time. The MATRIX is colour coded to signal poor performance (red), at-risk performance (yellow), and satisfactory performance (green) on each indicator, relative to a selected benchmark. The MATRIX is a powerful advocacy and social mobilization tool for communities and decision-makers. It helps stakeholders to see quickly the relative magnitude and urgency of health equity problems in a city. It can stimulate dialogue about the causes of inequities and appropriate response strategies. Every team should develop a MATRIX to reveal health inequities in their city.

The MONITOR is a graph that tracks health equity gaps over time. The MONITOR helps you to see if a health equity gap in your city (or region or country) is growing or shrinking. The MONITOR can be used by planners to help guide equity priority setting and it can also be used by evaluators to help measure the health equity impacts of programmes and policies. For priority setting, you can use the MONITOR to help assess whether an equity gap is growing and needs to be addressed, or if the situation is improving with the current level of resources. For health equity impact assessment, you can examine whether an equity gap widened or lessened after the introduction of new programmes or policies. The MONITOR can be used now to help measure the impact of programmes or policies that were introduced in the past. And going forward, it can be used to help measure the impact of response strategies that are implemented due to Urban HEART.

For efficiency’s sake, teams should produce the MATRIX first, and share the results (step 5). In consultation with stakeholders, you can choose whether to proceed with the MONITOR to look at a particular indicator in depth.
STEP 5: ASSESS AND PRIORITIZE HEALTH EQUITY GAPS AND GRADIENTS

WHY DO IT?
Now the team has produced strong evidence to show health inequities in your city. The goals of step 5 are to raise awareness of equity gaps in your city and to prioritize the problems requiring action. At step 6, you will help stakeholders to recommend the best policy and priority actions to respond to these problems. Obviously, step 5 and step 6 are closely connected. Both steps emphasize Urban HEART principles of social inclusion and intersectoral cooperation. Step 5 focuses on prioritizing problems collaboratively. Step 6 focuses on prioritizing solutions collaboratively.

WHAT TO DO?
Schedule priority-setting workshops and meetings with stakeholders. The purpose of these sessions is to involve communities and decision-makers directly in assessing the results of the MATRIX and MONITOR, and in prioritizing the problems that need to be tackled. Use the team’s network of contacts to attract participants to the meetings, and be sure to engage all the individuals and organizations you met with during step 1. Meeting formats will differ depending on the participants.

Teach participants how to read the MATRIX and MONITOR. There are two basic approaches for reviewing the charts to identify priorities (see Annex VI for details and examples):
• Reviewers can start by selecting a specific indicator (or policy domain, or neighbourhood) of interest, and then examine the MATRIX or MONITOR for equity problems associated with that indicator.
• Reviewers can look at the MATRIX broadly for problem clusters (i.e. red and yellow squares), and then trace these back to particular indicators, domains or neighbourhoods that require attention.

Facilitate discussion around three main topics:
A. Seeing trends or pockets of health inequities.
B. Understanding the causes and effects of the inequities.
C. Prioritizing problems or districts requiring action.

Probe issues in depth. The charts are coloured red, yellow and green as a simple way to visualize where equity problems are most pronounced in your city. Ask stakeholders if the results seem accurate to them (this is called “face validity”). You may discover mistakes or underreporting situations. Probe to explore the magnitude of problems. Review numeric results to assess the scale of problems and have discussions with residents, service providers and others to collect stories and explanations about probable causes and consequences of inequities. This qualitative information will be valuable when planning response strategies, at step 6.

Rank-order stakeholders’ equity priorities. Keep a list of the priority issues identified by stakeholders. The team should focus on issues that have greatest support across groups. You may end up with a lengthy list of priorities. If you want to address all these priorities, proceed to step 6. Or, you may need to develop a shortlist of issues requiring immediate, interim and long-term action. Some teams have devised a scoring system to rank-order priority issues. Suggested criteria for rank-ordering priorities include alignment with existing programme or policy priorities; community demand for action; magnitude of the inequity; relative need or disadvantage; and feasibility of appropriate responses (see step 6).
WHO SHOULD BE INVOLVED?
All team members and the stakeholders who were consulted during step 1, plus additional groups that have joined Urban HEART (or expressed interest in the process). If your results have revealed affected communities you did not engage at the start, you should engage them now.

WHAT RESOURCES ARE NEEDED?
Completed Urban HEART MATRIX and MONITOR charts, for distribution and display. You can use a poster or printouts, or an LCD projector plus laptop computer.
A short report on your Urban HEART process to date, including information about data sources and data quality checks you have performed.
Tools to record stakeholders’ recommendations (e.g. flipcharts, audio recorders or a projector).
Meeting spaces and resources to cover costs of participation (e.g. travel expenses, meals, child care).

WHAT KNOWLEDGE AND SKILLS ARE NEEDED?
• Strong familiarity with the Urban HEART MATRIX and MONITOR charts, and the Urban HEART process to date.
• Strong familiarity with stakeholders’ priorities and interests.
• Excellent facilitation skills. Different facilitators may be effective for different stakeholder groups.
• Excellent presentation skills, to debrief senior decision-makers and influential champions.
• Documentation skills, to prepare reports and presentations.
• Documentation skills, to record meeting outcomes and to develop an equity priority list.

HOW MUCH TIME WILL IT TAKE?
This step may be time consuming. You should schedule multiple meetings, to enable open discussion among diverse groups of stakeholders. You will require time to plan the meetings, and to record and compile the results. Estimate between one and two months.

WHAT ARE THE OUTCOMES?
Stakeholders are informed about health equity problems in your city, and have contributed to prioritizing the most important problems.
Stakeholders are convinced of the value of data sharing to assess social determinants of health and health inequities in your city.
The team has gathered additional, contextual information to explain the causes and consequences of priority equity problems. This information will help guide response selection.
Health equity priorities for your city are defined.

TIPS
Plan carefully to share Urban HEART evidence in your city. There is no prescribed approach. In some cities, it may be effective to meet with affected communities first, and equip them to present the results of the MATRIX and MONITOR to officials. In other places, it may be appropriate to visit decision-makers first. Use the team’s experience and savvy to plan your approach.

Prioritize meetings with affected communities. Bring Urban HEART results to affected communities for discussion. This is an essential step that will foster community empowerment and social inclusion. Many communities have been disillusioned when researchers take information from the area, but do not report back, or when research produces no tangible results. In Guarulhos, Brazil, the team coordinated participatory diagnosis workshops with local communities to assess results and recommend response strategies.

Tailor the sessions for each stakeholder group. At each meeting, ensure that your presentation materials are appropriate (e.g. in literacy level, language, degree of formality). Different facilitators may be appropriate for different contexts. Speak to communities in their own languages, and emphasize issues important to them.

Create a safe environment to talk about the social determinants of health. For example, in some communities, it may be appropriate to meet with women separately from men. This can give women a stronger voice and help ensure that issues particularly affecting them, such as lack of safety or security or gender-based violence, can be discussed openly.

Make time for discussion. At each session, set aside enough time to review the social determinants of health approach and the goals of Urban HEART. Explain how to interpret the MATRIX and MONITOR. Allow time for questions and answers about how the charts were produced (including questions about data). Most importantly, allow sufficient time for participant discussion.

Pay attention to “yellows” and “greens” in addition to “reds”. Red squares can signal urgent priority concerns and should be addressed. Encourage participants to think carefully about indicators that have been coded yellow. These may represent at-risk communities requiring interventions. Studying green indicators may uncover successful programmes that could be adapted for neighbouring districts.

Avoid surprises. Keep stakeholders updated throughout the Urban HEART process. Unexpected evidence about health inequities may be unwelcome and may undermine your goals for collaboration at step 6.

Keep it short. Do not add extra material to your Urban HEART debriefing presentation. A virtue of the Urban HEART MATRIX is its simplicity. Busy decision-makers like it because the results are easy to grasp, and background reading can be kept to a minimum. The colour coding draws attention to hot spots and the policy domain framework enables rapid delegation. At step 1, you prepared decision-makers to understand Urban HEART. Now you can deliver a pithy report that officials will appreciate.

CHECKLIST
• Have you tailored your meeting agendas and presentation materials for particular stakeholder groups?
• Have you looked at numbers as well as colours on the charts, to assess the magnitude of equity problems?
• Have you verified the accuracy of your results?
• Have you collected supplementary, qualitative information to better understand the context, causes and consequences of equity problems in your city?
STEP 6: IDENTIFY THE BEST RESPONSE

WHAT TO DO?

Link assessment to response. Once you have identified priority health equity issues, the next step is to identify the appropriate response(s). In this respect, step 6 flows naturally from step 5. Step 6 involves the same degree of intensive consultation and deliberation with stakeholders. A good strategy is to fold response planning into the priority-setting workshops you scheduled during step 5. Remember, as you assess the feasibility of different responses, you may want to revise your priority list, to focus on what is doable.

Brainstorm potential responses. Urban HEART provides an extensive menu of programme and policy interventions to reduce health inequities (see Annex VII). These interventions have been reviewed by experts and many have been tested in other cities. Use this resource to brainstorm with stakeholders about relevant responses. Affected communities should play a strong role in this process. Their health is at stake, and they may know best what needs to be done.

Use criteria to choose the best response. This can be done systematically (for example, by using a scoring system to weigh the value of different criteria) or less formally. There is no prescribed approach. The important point is to be comprehensive and to assess potential interventions carefully (see box below for recommended selection criteria). Above all, ensure that the interventions you prioritize are aimed to reduce equity gaps. This may mean delivering the intervention exclusively to vulnerable groups, or tailoring it for cultural relevance or doing extensive outreach. Use the expertise on the team, and consult other experts (including researchers, policy-makers and affected communities) for advice on selecting the best response or set of responses.

Write your response proposal. Your proposal should clearly describe why the response is needed, including your evidence about the health equity problem and its causes and consequences. Describe objectives of the response intervention, the criteria you used to select it, how it will work, how it will reduce health inequities, where and how it should be implemented, who needs to be involved, how much it could cost and how it aligns with government priorities. Use the information you collected during your various Urban HEART consultations. Describe your Urban HEART process to date, and include the MATRIX or MONITOR charts that demonstrate your city’s priority equity gaps.

Develop an advocacy plan. Engage your champions and affected communities. They may be ideal spokespersons to present your response proposal to decision-makers, and to advocate its adoption in new planning and budgeting cycles.

WHY DO IT?

The purpose of step 6 is to produce clear and strong recommendations about what governments and communities need to do to reduce the priority health inequities you have uncovered. The merits of your Urban HEART recommendations will be threefold:

• You can show evidence that action is needed.
• You can demonstrate the relevance, effectiveness and feasibility of the proposed response.
• Your proposal has the support and backing of relevant sectors, communities and champions.
WHO SHOULD BE INVOLVED?

- All team members, champions and stakeholders who are affected by or who have a direct interest in the priority equity gaps identified at step 5.
- Other experts who can provide advice about the effectiveness of interventions, and optimal ways to advocate the uptake of your recommendations.

WHAT RESOURCES ARE NEEDED?

- The Urban HEART response interventions menu. See Annex VII. You may want to make copies for distribution during consultations.
- Research reports, case studies and other evidence of intervention effectiveness. Many of these resources have been collected for use by Urban HEART teams and can be downloaded at http://www.who.int/urbanheart.
- Additional resources to support workshops and consultations, as described for step 5.

WHAT KNOWLEDGE AND SKILLS ARE NEEDED?

- Knowledge of existing programmes and policies.
- Knowledge of the effectiveness of potential programmes.
- Skills in appraising the scientific evidence on interventions.
- Knowledge of community priorities and preferences.
- Excellent facilitation and negotiation skills, to encourage open and transparent discussion about potential interventions and their relative merits.
- Community engagement skills.
- Knowledge of government planning and budgeting cycles and strategic sense about how to encourage uptake of the response plan.
- Proposal writing skills.

HOW MUCH TIME WILL IT TAKE?

Brainstorming response strategies may overlap with step 5. Additional time will be required to evaluate candidate responses and to make a final response selection. Allocate two to three months for these activities. Developing your proposal will also take time. Although you should use the information you collected throughout the Urban HEART process, you will also want to do additional consultations. Allocate one to two months for this activity.

Preparing an advocacy plan and equipping stakeholders to do advocacy may take one to two months.

WHAT ARE THE OUTCOMES?

The Urban HEART team has developed an evidence-based, feasibility-tested and collaborative plan to respond to priority health inequities in your city. An advocacy plan has been developed to champion the Urban HEART response proposal to decision-makers. The team has completed the assessment and response phases of Urban HEART. You can move forward to next steps. Congratulations!

TIPS

Use a scoring system to choose the best response. Many pilot cities recommend using a weighting system to prioritize equity problems and to select the best response. This is a systematic approach for comparing and selecting candidate responses. This strategy was utilized in Paranaque City, Philippines, and it helped the team decide on three priorities: improving access to safe water in poor barangays (city subdistricts), increasing the rate of facility-based births and addressing the index crime rate. See Annex VIII for a sample scoring table for selecting the best response.

Define clear concrete objectives for the proposed Urban HEART response. Be clear about what the intervention(s) should accomplish. Objectives should be “SMART” – Specific, Measurable, Actionable, Realistic, and Time-bound. A quantifiable objective, linked to your problem indicator and to the numeric scores presented on the MATRIX or MONITOR, is optimal. This approach directly links your Urban HEART response plan to the assessment phase. The team in Ulaanbaatar, Mongolia, developed objectives using this framework to assess response performance.

Include a strong monitoring and programme evaluation component. Plan to measure the response in action. Evaluation evidence can help to improve the quality of the response and can guide interventions elsewhere. Evaluation should focus not only on if a programme works to reduce health inequities, but also how, why, when and for whom it works (or does not work). Work with experienced researchers to design an evaluation.

Propose legislative changes to improve health equity. Most actions resulting from Urban HEART have been tied to legislative changes in participating cities.

Build on existing programmes. Legislatively and logistically, it is easier to expand existing programmes than to launch new ones from scratch. Look for existing programmes that could incorporate or support your proposed intervention. This can minimize costs and prevent duplication, which will make your proposal more palatable to decision-makers. For example, in Nakuru, Kenya, the team is working to link water quality issues to national plans to address climate change. In Mexico City, the team is aligning its recommendations with Mexico’s new health laws. In Jakarta, Indonesia, the team’s recommendations are streamlined with the local WHO Healthy Cities strategy.

Help decision-makers to “own” the issue. You need their commitment to the Urban HEART response plan, so they will advocate it in parliament or at city council. Include them in (or regularly update them about) your activities. Ensure that they understand the equity problem clearly and why the recommended response makes sense. They can provide strategic advice about when and how to present the proposal to others.

Time workshops and advocacy efforts to harmonize with planning and budgeting cycles. This will increase opportunities for decision-makers to adopt your response proposal into government plans.

Participate in formal and also informal advocacy. To encourage uptake of Urban HEART across Kenya, the team made formal presentations to national government, and also worked behind the scenes promoting Urban HEART to sister municipalities.

One size does not fit all when it comes to health policy in a rapidly urbanizing environment. Some populations and some districts will face greater problems than others. With Urban HEART, the team can make an evidence-based case for policies and programmes that focus on small areas or districts inside cities.
**CHECKLIST**

- Have you considered the strengths, weaknesses, opportunities and threats associated with potential responses?
- Have you made sure your selected response plan will target your health equity priorities? Make sure that your intervention will not make inequities worse.
- Has the affected community helped design the response plan?
- Do you know the right time, format and audience for presenting your proposal?

**BUILDING COMMUNITY CAPACITY: A SUCCESS STORY**

Urban HEART generates evidence that can empower communities to advocate on their own behalf. For example, in Davao, Philippines, residents of the Sasa barangay learned through Urban HEART that they lived in the only neighbourhood marked “red” for unsafe water. With this evidence, the community was empowered to approach the mayor and successfully lobbied for clean water access. Popular education related to the social determinants of health, government process and human rights, as well as media training, can build community capacity to advocate health equity. Other resources may also be needed, such as transportation, child care, and translation support, to enable residents to participate fully.

**HOW TO USE THE URBAN HEART RESPONSE MENU**

1. Review your MATRIX to confirm the policy domain responsible for your problem indicator.
2. Turn to the appropriate section of the menu in Annex VII (it is organized by policy domain).
3. Review the five strategy packages for your policy domain. Choose the package that is most relevant to the equity problem you want to address.
4. Review the list of interventions in the strategy package.
5. Choose the best response using clear selection criteria, such as feasibility, cost-effectiveness and acceptability. See the checklist below for a full list of selection criteria.
6. Select the intervention that is most appropriate for your context.

**CRITERIA FOR SELECTING THE BEST RESPONSE**

| REDUCES HEALTH INEQUITIES | • Will the intervention address the gaps in health determinants and outcomes?  
• Does it address the target as outlined in the strategic objective’s expected outcomes? |
|---------------------------|----------------------------------------------------------------------------------|
| AVAILABLE LOCAL RESOURCES  | • Is there commitment from other sectors and stakeholders regarding resources?  
• Does the intervention require more than the current collected resources?  
• Has accountability been set for each party involved? |
| ACCEPTABLE BY AFFECTED COMMUNITIES / OTHER KEY PLAYERS | • Is the intervention culturally sensitive?  
• Have the community members shared their views on the priority of needs and appropriate interventions? |
| ACHIEVABLE WITHIN TIME FRAME | • Given available resources (financial, human, organizational), can the intervention be implemented within a time frame that will be socially, politically and economically acceptable? |
| LIKELY TO BE EFFECTIVE & EFFICIENT | • Is the intervention proven to be of minimal cost for the maximum effect on health inequities?  
• Is it proven to be cost-effective or is it shown through outcome evaluation studies to be of proven or promising effectiveness? |
| COMPLIES WITH LOCAL/ NATIONAL PRIORITIES | • Is the intervention’s goal aligned with the local or national political agenda?  
• Is there political support from the local government? |
NEXT STEPS: INTEGRATE URBAN HEART IN THE POLICY DEVELOPMENT CYCLE

WHY DO IT?

At step 6, the team developed an evidence-based response plan to address health inequities. Congratulations! You have completed the assessment and response phases – which are the focus of this User Manual for Urban HEART.

Now you have several new goals and next steps. The first goal is for government to adopt, fund and implement your Urban HEART response proposal.

Your broad-reaching goal is to integrate the Urban HEART process into local government planning cycles. This means, first, that governments will adopt a health equity lens when planning resource allocation. Second, it means that governments will adopt a continuous, evidence-based approach to monitoring health equity, including regular assessment, prioritization, planning, action and evaluation. Third, it means that governments will prioritize a determinants of health approach to address population health, and will encourage intersectoral cooperation and community engagement.

AIM FOR SUSTAINABILITY

Encourage the mainstreaming of these Urban HEART principles into the government planning cycle:
- Recognizing the social determinants of health
- Using an equity perspective for decision-making
- Community participation
- Intersectoral action for health
- Intergovernmental cooperation
- Using evidence to promote policy and programme change.

RESOURCES AND SKILLS YOU WILL NEED

Achieving these new goals will require new activities. It may also require new team members and new skills and contacts. For example, you will need to connect with people who have significant expertise in government processes, advocacy, negotiation, and policy and programme development. When you focus on implementation, you will need additional skills, depending on the nature of the intervention. You will also need strong programme evaluation skills, as noted in step 6. And you will need to document your process, so that you can learn from your experience and build on it for the next cycle of Urban HEART.

Urban HEART integrated into the local planning cycle

AIM FOR SUSTAINABILITY

- Defining the problem
- Setting the agenda
- Monitoring and Evaluation
- Developing policy
- Urban HEART
- Programme
- Policy
- Assessment
- Response

Share your experiences, advice, and resources as we build a worldwide network of Urban HEART teams. Visit http://www.who.int/urbanheart for more information.

Although policy-making processes can differ depending on the country or even city context, there are common underlying aspects. In brief, the policy-making process is a system – mechanisms and rules – that allows both policy formulation (what can be done) and policy implementation (how to make it work). The outputs of this system involve actors from various groups (community, lobbies, etc.) who participate, influence, act and impact on policies. The figure below presents the cyclical nature in the management of Urban HEART. It ensures consistency with the local governance processes, allows the integration of the results of the assessment in the local political debate, facilitates linkages with other sectors, ensures better chances of influencing the budget allocation and, most importantly, puts health equity issues at the heart of the local policy-making process. It is likely there are already existing assessments and interventions ongoing in the cities in which Urban HEART will be implemented. Urban HEART can complement existing social and health initiatives by providing an equity perspective.
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- Community participation
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- Intergovernmental cooperation
- Using evidence to promote policy and programme change.
This policy brief outlines the rationale for local and national authorities to take actions to ensure all urban residents have a fair opportunity to lead a healthy life. Most people in the world live in urban areas and face unfair differences, or inequities, in health opportunities and outcomes. The social dynamics that cause urban health inequity can be modified to promote equity and to improve urban health conditions in general. Local and national leaders are urged to routinely assess urban health equity and to achieve a more equitable urban health environment through intersectoral and socially inclusive processes.

WHY SHOULD CITY GOVERNMENTS ADDRESS HEALTH INEQUITIES?
Worldwide there has been a profound shift of people from rural areas to cities, drawn by the benefits of urban dwelling – greater access to employment, education, transportation and health care, as well as the vibrancy of city life (1). In many cases, city resources and infrastructure are overburdened, limiting the access of vulnerable populations to adequate nutrition, health care services, safe environments and other factors conducive to good health and well-being (2, 3). This leads to health inequity, a difference in health that is systematic, socially produced and unfair (4–6). In response, leaders across the globe are taking steps to improve urban health and health equity as a matter of human rights and justice, as well as to ensure the social, cultural and economic vitality of their cities.

HOW DOES SOCIAL STRATIFICATION PLAY A ROLE IN URBAN HEALTH EQUITY?
Addressing the key social dynamics that create inequity can both promote equity and have multiplier effects that are beneficial to the health of the city as a whole (4, 6, 7, 8). Viewing illness purely from a biological standpoint has many shortcomings; the evidence points overwhelmingly to social stratification as a key determinant of illness, with inequitable health outcomes arising from differences in ethnicity, gender, age, income, education, locality and type of occupation. In urban Canada, for example, infant mortality rates are consistently higher in lower-income neighbourhoods. However, with the advent of social and health reform, tremendous gains have been made not only in reducing the overall infant mortality rate but also in reducing the socioeconomic disparity in infant mortality (Figure 1).

![Figure 1 Infant mortality rate by neighbourhood income quintile, urban Canada, 1971–1996](image_url)
HOW DOES THE URBAN ENVIRONMENT PRESENT UNIQUE HEALTH EQUITY CHALLENGES?
In urban environments, local leaders are confronted by the vast challenge of managing finite resources amidst rapidly increasing demands. For example, in Shanghai, differences in age-adjusted mortality rate were found to be associated with ward-level differences in aspects of the physical and economic urban environment, namely access to green and open spaces, area of floor space in residences; employment in the retail industry; and access to health care (10).

A large share of the burden of health inequity falls on the one third of the urban population worldwide who live in slums (6). Living in areas of concentrated poverty can result in social isolation to the degree that residents cannot fully participate in civic society.

Small area variations in health outcomes highlight the effects of local policy, resources and opportunities on health equity, suggesting the possibilities for reform. In periods of growth and social change, policies are needed to prevent urban environments and their social structures from creating steeper social gradients in health opportunities and outcomes.

WHY TAKE A SOCIAL DETERMINANTS APPROACH TO REDUCING HEALTH INEQUITY?
Some localities pursue a social and environmental approach to reducing health inequity for social justice reasons, arguing that a health gradient that is attached to such factors as social status, privilege and gender is unfair (2, 4, 8). But it is also a practical approach. An exclusively biomedical and behavioural approach to public health will not be able to keep up with demand nor meet the diverse needs of urban populations (5). Furthermore, as social determinants underlie most health behaviours, risks and outcomes, it is here that urban policy can make the greatest gains in health promotion.

What kind of approach is needed? In summary, the most appropriate approach:
• is population-based
• is preventative
• targets the social gradient (to improve health equity)
• targets social determinants (to capitalize on multiplier effects)
• integrates community participation.

SOLUTIONS: HOW LOCAL POLICIES CAN ADDRESS SOCIAL INEQUITIES IN HEALTH
There are particular advantages of urban life, including strong administrative structures, well-organized educational and health care systems, and employment opportunities. Building on these strengths, urban governments and communities can engage in intersectoral, policy-relevant activities that respond to social stratification by addressing the structural factors that generate or reinforce social stratification (Table 1) (11).

In addition, health-related policies that address intermediate factors, such as the quality and quantity of the health workforce, availability of primary care and tertiary services, and public health campaigns (for example on vaccines and health behaviours) can mediate between structural factors and direct health outcomes and are thus integral to improving health equity.

Table 1. Examples of structural approaches to reduce social stratification and health inequities in urban areas

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop efficient economic growth strategies</td>
<td>Promote human development, in particular through measures that reduce poverty and income inequalities, improve living conditions for disadvantaged groups, and increase access to high-quality, affordable education and health services.</td>
</tr>
<tr>
<td>Promote health as a route out of poverty</td>
<td>Intensify health promotion and prevention efforts, in particular among vulnerable groups, who are at greatest risk for poor health and its social and financial consequences.</td>
</tr>
<tr>
<td>Improve equitable access to education</td>
<td>Reduce social and economic barriers blocking access to education and training; support disadvantaged schools and families; prevent early drop-out.</td>
</tr>
<tr>
<td>Improve equitable access to health care</td>
<td>Promote a multisectoral perspective on health development; reduce the burden of payment; monitor inequities within the health care system.</td>
</tr>
<tr>
<td>Promote social and community inclusion</td>
<td>Create neighbourhood infrastructure to facilitate horizontal social interactions; develop initiatives to strengthen the democratic process and ensure the participation of disenfranchised groups.</td>
</tr>
</tbody>
</table>

Source: Dahlgren and Whitehead (11).
An example of a successful urban health initiative that addressed the social determinants of health and resulted in dramatic reductions in the social gradient is provided by work done in Sobral-Ceara, Brazil (Box 1).

**Box 1. Improving urban health equity: example of Sobral-Ceara, Brazil**

Significant improvements in urban health and equity were made in less than 10 years (1997–2003) in Sobral-Ceara by increasing the following: percentage of housing with clean drinking-water, kilometres of cycle paths, green space within the city boundary, number of children attending primary school, access to primary health care, percentage of households with regular refuse pickup, and coverage of sewage networks. Infant mortality dropped from 64 to 19 per 1000 live births. These successes were attained through intersectoral cooperation and commitment to improvements in overall city health and reducing local health inequities, and rigorous strategic planning.

Source: Andrade et al. (12).

**RECOMMENDATIONS**

Effective incorporation of health equity as a component of urban planning, in the context of rapid growth and development, requires the following strategies:

- **Data gathering.** Collect appropriate data to enable an accurate assessment of differential health determinants and outcomes within a selected area.
- **Data application.** Use the data gathered to design interventions capable of addressing the inequities identified.
- **Assess health outcomes by social risk factors.** These factors include age, gender, income, educational attainment and local area of residence.
- **Put in place sound tracking methods.** These are necessary for monitoring health improvements and identifying challenges during implementation of programmes to reduce health inequities.
- **Promote employment and education.** Address the powerful social risk factors for morbidity and avoidable mortality by promoting economic opportunities and providing compulsory education for boys and girls.
- **Incorporate cultural effectiveness.** Programmes and policies directed at vulnerable populations should include representation by members of the targeted groups if they are to be culturally effective.
- **Build intersectoral collaboration.** Cross-disciplinary and cross-departmental collaborations, including community groups and local government units involved in health and safety, education, housing, transportation and parks and recreation, promote collective interest and commitment.

Box 2 gives an example of these processes operating in practice.

**Box 2. Successful processes for improving urban health: example of Noarlunga, Australia**

A Healthy City Network, initially established with the assistance of the World Health Organization, became its own nongovernmental organization, and mandated that a majority of the members on the management committee were community members to ensure local stakeholder interest and responsiveness to local needs. The organization fostered intersectoral collaboration through establishing relationships with a local university, the national health service and the local health department. It also focused on three distinct initiatives (domestic violence, drugs, safe community) in order to concentrate allocation of resources. Local success, defined as sustained community leadership and use of a model that could be adapted to local conditions.

Source: Baum et al. (13).

References

Getting started: what you need to know about using health and health determinants indicators to measure health equity gaps

The power of Urban HEART is twofold. First, it enables teams to identify significant differences in health outcomes and health chances facing different population groups within a city or between cities. Second, it enables teams to select health and social policy interventions that will target important health inequities. Defining a strong, relevant, and manageable health equity indicator set for your city is the key to moving forward with both of these processes.

WHAT IS AN INDICATOR?

An indicator helps us understand where we are, where we are going and how far away we are from a goal. An indicator is similar to a small torch that casts light into a large, darkened room. It is a small bit of information (for example a percentage) that can summarize large amounts of information about what is happening in a complex system or a complex programme. The value of a good indicator is its efficiency: it enables us to measure what is important, without having to measure everything.

Urban HEART offers a menu of indicators that teams can select from in order to design an indicator set that will efficiently represent how well the health care system and other policy domains are supporting the health of diverse populations in a city or between cities. Each of the indicators proposed by Urban HEART has been tested rigorously to ensure that it is an appropriate measure for diagnosing the performance of a broader system or set of programmes. For example, infant mortality is an indicator that tells more than simply the rate of infant deaths in a given area. It has been shown to be a strong sign of how well the health care system is addressing maternal and child health in general. It can also represent how well social and human development policies (for example women’s education and income) and physical infrastructure (for example birthing facilities) are supporting the health of pregnant women and newborns as well as other vulnerable populations.

DISAGGREGATING INDICATORS TO MEASURE EQUITY GAPS

Disaggregating each indicator by population group or geographical area enables teams to identify where and to what extent inequities exist. Depending on the indicator, data could be disaggregated by population group (by gender, age, etc.), geographical area or “locale”, or by socioeconomic group (such as education or income group). Disaggregating by locale, for example, is primarily a test for differences in living and working conditions that cover a wide range of deprivation (for example the homeless, transients, squatters, people who live in tents). In other words, locale may sometimes refer to a population group rather than a specific location.
CORE INDICATORS AND OTHER INDICATORS

Urban HEART includes 12 indicators that every city should adopt for its indicator set. These are called “core indicators”. The core indicators are recommended for three reasons. First, they have been shown to be globally relevant to urban health, especially in relation to equity. Second, they are usually available from routinely collected data. Finally, they are readily comparable across cities and countries.

In addition to the core indicators, Urban HEART also includes a menu of additional indicators. These indicators have also been shown relevant to urban health; however, they may be less sensitive markers of equity issues, and they may not be relevant for all cities. The purpose of including these indicators is to equip teams with options for adapting their Urban HEART indicator set to the unique conditions of their own city.

This section lists the Urban HEART core indicators, strongly recommended indicators and optional indicators. For each, it gives their definition, numerator and denominator, calculation method, recommended disaggregation variables, possible data sources, and important notes, such as how the indicator relates to the MDG indicators, or any caveats about the indicator. The descriptions provided on each of these aspects, however, are not meant to be exhaustive or applicable in all contexts. For example, in some cases there may be other data sources from which a particular indicator could be better estimated than the ones listed here. Or, in the case of recommended disaggregation variables, there may be other variables, such as ethnicity or migrant status, that are very relevant in certain cities or contexts but not in others. Thus, the information presented here is intended to be general guidelines; users are strongly encouraged to adapt them to their local context to ensure they are relevant and appropriate.

DEFINITION SOURCES

The main sources for the indicator definitions are the following (additional sources or references are noted in the text, as applicable).


CORE INDICATORS

A. Health care outcomes: summary indicator

1. Infant mortality

<table>
<thead>
<tr>
<th>Definition</th>
<th>The probability (expressed as a rate per 1000 live births) of a child born in a specified year dying before reaching the age of one year if subject to current age-specific mortality rates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Estimated number of infant deaths before one year of age in the indicated year.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Number of live births in the indicated year.</td>
</tr>
<tr>
<td>Calculation</td>
<td>((\text{Numerator}/\text{Denominator}) \times 1000)</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Sex, income level, mother’s education, local area (ideally by mother’s usual place of residence, not by place of child birth).</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Vital registration, census, surveys.</td>
</tr>
</tbody>
</table>
| Comments | • This corresponds to MDG indicator 14 (infant mortality rate).
  • Infant deaths are, from an epidemiological perspective, relatively rare events, which necessitates large sample sizes, or denominators, for direct estimates of mortality levels. |

B. Health outcomes: disease-specific indicators

2. Diabetes

<table>
<thead>
<tr>
<th>Definition (A)</th>
<th>Diabetes prevalence (age-standardized) expressed as the number of diabetes cases per 100 000 population (point prevalence).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator (A)</td>
<td>Number of people with diabetes at a specified point in time.</td>
</tr>
<tr>
<td>Denominator (A)</td>
<td>Total population at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation (A)</td>
<td>((\text{Numerator}/\text{Denominator}) \times 100 000) Note: When appropriate, adjust for differences in the age distribution of the population by applying the observed age-specific rates to the WHO World Standard Population (i.e. direct age-standardization; see comments and reference below).</td>
</tr>
<tr>
<td>Definition (B)</td>
<td>Diabetes mortality (age-standardized) expressed as the number of diabetes deaths per 100 000 population.</td>
</tr>
<tr>
<td>Numerator (B)</td>
<td>Number of deaths attributable to diabetes during a specified period.</td>
</tr>
<tr>
<td>Denominator (B)</td>
<td>Total population at risk during the indicated period.</td>
</tr>
<tr>
<td>Calculation (B)</td>
<td>((\text{Numerator}/\text{Denominator}) \times 100 000) Note: Age-standardize, when appropriate (see comments and reference below).</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Sex, age, income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Case notifications (from health facilities), surveys, vital registration, census.</td>
</tr>
</tbody>
</table>

continued on next page
### 3. Tuberculosis (TB)

<table>
<thead>
<tr>
<th><strong>Definition (A)</strong></th>
<th><strong>TB detection rate</strong> expressed as the proportion of new smear-positive TB cases diagnosed and reported to WHO by directly observed treatment, short course (DOTS) programmes in a specified year.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator (A)</strong></td>
<td>Number of new smear-positive TB cases notified to WHO by DOTS programmes for a specified year.</td>
</tr>
<tr>
<td><strong>Denominator (A)</strong></td>
<td>Estimated total number of new smear-positive TB cases for the indicated year.</td>
</tr>
<tr>
<td><strong>Calculation (A)</strong></td>
<td>( \frac{\text{Numerator (A)}}{\text{Denominator (A)}} \times 100 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Definition (B)</strong></th>
<th><strong>TB cure rate</strong> expressed as the proportion of new smear-positive TB cases registered under DOTS in a specified year that successfully completed treatment, with bacteriological evidence of success.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator (B)</strong></td>
<td>Number of new smear-positive TB cases cured under DOTS during a specified year.</td>
</tr>
<tr>
<td><strong>Denominator (B)</strong></td>
<td>Number of new smear-positive TB cases registered under DOTS in the indicated year.</td>
</tr>
<tr>
<td><strong>Calculation (B)</strong></td>
<td>( \frac{\text{Numerator (B)}}{\text{Denominator (B)}} \times 100 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Definition (C)</strong></th>
<th><strong>TB prevalence</strong> expressed as the number of cases per 100 000 population at a specified point in time (point prevalence).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator (C)</strong></td>
<td>Number of people with all forms of TB at a specified point in time (point prevalence).</td>
</tr>
<tr>
<td><strong>Denominator (C)</strong></td>
<td>Total population at the indicated point in time (point prevalence).</td>
</tr>
<tr>
<td><strong>Calculation (C)</strong></td>
<td>( \frac{\text{Numerator (C)}}{\text{Denominator (C)}} \times 100 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Definition (D)</strong></th>
<th><strong>TB mortality</strong> expressed as the number of TB deaths per 100 000 population during a specified period (mortality rate).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator (D)</strong></td>
<td>Number of deaths attributable to all forms of TB during a specified period.</td>
</tr>
<tr>
<td><strong>Denominator (D)</strong></td>
<td>Total population at risk for the indicated period.</td>
</tr>
<tr>
<td><strong>Calculation (D)</strong></td>
<td>( \frac{\text{Numerator (D)}}{\text{Denominator (D)}} \times 100 )</td>
</tr>
</tbody>
</table>

**Comments**

- These indicators correspond to MDG indicators 23 (prevalence and death rates associated with tuberculosis) and 24 (proportion of tuberculosis cases detected and cured under DOTS).
- A distinction should be made between notification or detection rates (based on the number of cases that get notified or reported, for example by health facilities) and actual morbidity and mortality rates (based on the number of cases that actually occur, whether detected or not). Notification rates of conditions that are not routinely reported can be a gross underestimate of actual morbidity and mortality rates.

**Reference**


### 4. Road traffic injuries

<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th>Road traffic death rate expressed as the number of cases per 100 000 population.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of fatal road traffic injuries during a specified period.</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Total population at risk for the indicated period.</td>
</tr>
<tr>
<td><strong>Calculation</strong></td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
</tbody>
</table>

**Recommended disaggregation variables**

- Sex, age, income, education, local area.

**Possible data sources**

- Case notifications (from law enforcement, emergency medical services, health facilities), surveys, vital registration, census.

**Comments**

A distinction should be made between notification or detection rates (based on the number of cases that get notified or reported, for example, by law enforcement) and actual morbidity and mortality rates (based on the number of cases that actually occur, whether detected or not). Notification rates of conditions that are not routinely reported can be a gross underestimate of actual morbidity and mortality rates.

**Reference**


### 5. Access to safe water

<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th>Proportion of population with sustainable access to an improved water source expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of people (or households) who use piped water, public tap, borehole or pump, protected well, protected spring or rainwater, measured at a specified point in time.</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Total population (or households) at the indicated point in time.</td>
</tr>
<tr>
<td><strong>Calculation</strong></td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
</tbody>
</table>

**Recommended disaggregation variables**

- Income, education, local area.

**Possible data sources**

- Administrative data (from public/private agencies in charge of water supply), surveys, census.

**Comments**

- This corresponds to MDG indicator 30 (proportion of population with sustainable access to an improved water source).
- Improved water sources do not include vendor-provided water, bottled water, tanker trucks or unprotected wells and springs.
- When data from administrative sources are used, they generally refer to existing sources, whether used or not. Despite official WHO definitions, the judgement about whether a water source is safe is often subjective. In addition, the existence of a water supply does not necessarily mean that it is safe or that local people use it. For those and other reasons, household survey data are generally better than administrative data, as survey data are based on actual use of sources by the surveyed population rather than the simple existence of the sources.
6. Access to improved sanitation

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of population with access to improved sanitation expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of people (or households) who have access to facilities that hygienically separate human excreta from human, animal and insect contact, including sewers or septic tanks, pour-flush latrines and ventilated improved pit latrines, provided they are not public, measured at a specified point in time.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total population (or households) at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Administrative data (from public/private agencies in charge of sanitation), surveys, census.</td>
</tr>
<tr>
<td>Comments</td>
<td>• This corresponds to MDG indicator 31 (proportion of population with access to improved sanitation). • When data are from administrative sources, they generally refer to existing sanitation facilities, whether used or not. Household survey data are therefore generally better than administrative data, since survey data are based on actual use of facilities by the surveyed population rather than the simple existence of the facilities.</td>
</tr>
</tbody>
</table>

D. Social determinants of health: social and human development

7. Completion of primary education

<table>
<thead>
<tr>
<th>Definition</th>
<th>Gross intake ratio to last grade of primary education.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Total number of new entrants in the last grade of primary education, regardless of age, for a specified school year.</td>
</tr>
<tr>
<td>Denominator</td>
<td>The total population of the theoretical entrance age to the last grade of primary education for the indicated school year.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Child’s sex, household income, mother’s education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Administrative data (from ministry or department of education), surveys, census.</td>
</tr>
<tr>
<td>Comments</td>
<td>This relates to MDG indicator 7a (primary completion rate).</td>
</tr>
</tbody>
</table>

8. Skilled birth attendance

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of births attended by skilled health personnel expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of live births attended by skilled health personnel, including doctors, nurses and trained midwives, during a specified period.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total number of live births during the indicated period.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Household income, mother’s education, local area (ideally by mother’s usual place of residence and not by place of child birth).</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Health service statistics, surveys, census.</td>
</tr>
<tr>
<td>Comments</td>
<td>• This corresponds to MDG indicator 17 (proportion of births attended by skilled health personnel). • Traditional midwives (as opposed to trained midwives) are not considered skilled health personnel.</td>
</tr>
</tbody>
</table>

9. Fully immunized children

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of fully immunized children by one year of age expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of fully immunized children by one year of age, measured at a specified point in time or during a specified period.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total number of children who have reached one year of age at the indicated time or during the indicated period.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Child’s sex, household income, mother’s education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Health service statistics (e.g. district health centres, vaccination teams, physicians), surveys, census.</td>
</tr>
<tr>
<td>Comments</td>
<td>• This relates to MDG indicator 15 (proportion of one-year-old children immunized against measles). • Usually, a fully immunized child is one who has received doses of the “standard eight” antigens – BCG, DTP (3 doses), polio (3 doses), and measles vaccines – by one year of age, and each administered dose was valid. In countries at risk for yellow fever, this should be included. New vaccines (hepatitis B and Hib) are not usually included in this definition; in some countries, BCG is excluded from this definition. The definition of fully immunized children used in a survey should be specified and it may vary according to the national immunization policy.</td>
</tr>
</tbody>
</table>

Reference

10. Prevalence of tobacco smoking

**Definition**
Proportion of population currently smoking cigarettes and other forms of tobacco products expressed as a percentage.

**Numerator**
Number of people who currently smoke tobacco, measured at a specified point in time.

**Denominator**
Total population at the indicated time.

**Calculation**
\[
\text{(Numerator/Denominator) x 100}
\]

**Recommended disaggregation variables**
Sex, age, income, education, local area.

**Possible data sources**
Surveys.

**Comments**
Current smoking includes both daily and non-daily or occasional smoking.

---

11. Unemployment

**Definition**
Proportion of population currently unemployed expressed as a percentage.

**Numerator**
Number of people who are currently unemployed, measured at a specified point in time.

**Denominator**
Total number of people eligible for employment at the indicated time.

**Calculation**
\[
\text{(Numerator/Denominator) x 100}
\]

**Recommended disaggregation variables**
Sex, age, education, local area.

**Possible data sources**
Administrative records, labour statistics, surveys.

**Comments**
- This corresponds to the United Nations Common Country Assessment Indicator Framework’s indicator 31 (unemployment rate) and also relates to MDG indicator 45 (unemployment rate of young people).
- The “unemployed” comprise all persons above a specified age who during the reference period were (a) “without work”, i.e. were not in paid employment or self-employment; (b) “currently available for work”, i.e. were available for paid employment or self-employment; and (c) “seeking work”, i.e. had taken specific steps to seek paid employment or self-employment.

**Reference**

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12. Government spending on health

**Definition**
Total public expenditure on health expressed as a percentage of total government expenditure in a given financial year.

**Numerator**
Government spending on health maintenance, restoration or enhancement in a given financial year.

**Denominator**
Total government spending in the indicated financial year.

**Calculation**
\[
\text{(Numerator/Denominator) x 100}
\]

**Recommended disaggregation variables**
Local area.

**Possible data sources**
National health account reports, public expenditure reports, global financial statistics.

---

13. Under-five mortality

**Definition**
The probability (expressed as a rate per 1000 live births) of a child born in a specified year dying before reaching the age of five if subject to current age-specific mortality rates.

**Numerator**
The estimated number of children born in a specified year dying before five years of age.

**Denominator**
Total number of live births in the indicated year.

**Calculation**
\[
\text{(Numerator/Denominator) x 1000}
\]

**Recommended disaggregation variables**
Child’s sex, household income, mother’s education, local area (ideally by mother’s usual place of residence and not by place of child birth).

**Possible data sources**
Vital registration, census, surveys.

**Comments**
This corresponds to MDG indicator 13 (under-five mortality rate).
14. Maternal mortality

<table>
<thead>
<tr>
<th>Definition</th>
<th>The number of maternal deaths per 100,000 live births, during a specified period, usually one year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of maternal deaths in a specified period.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total number of live births during the indicated period.</td>
</tr>
<tr>
<td>Calculation</td>
<td>((\text{Numerator}/\text{Denominator}) \times 100,000)</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Local area (ideally by mother’s usual place of residence and not by place of childbirth).</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Vital registration, surveys, census, health service records.</td>
</tr>
<tr>
<td>Comments</td>
<td>• This corresponds to MDG indicator 16 (maternal mortality ratio). • Maternal death is defined as the death of a woman while pregnant or within the 42 days after termination of that pregnancy, regardless of the length and site of the pregnancy, due to any cause related to or aggravated by the pregnancy itself or its care, but not due to accidental or incidental causes. Maternal deaths are, from an epidemiological perspective, relatively rare events, which necessitates large sample sizes, or denominators, for direct estimates of mortality levels.</td>
</tr>
</tbody>
</table>

15. Life expectancy at birth

<table>
<thead>
<tr>
<th>Definition</th>
<th>The number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child’s life.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>N/A</td>
</tr>
<tr>
<td>Denominator</td>
<td>N/A</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Child’s sex, household income, mother’s education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Vital registration, census, surveys.</td>
</tr>
<tr>
<td>Comments</td>
<td>Life expectancy at birth is estimated as an output of a life table. A life table presents a set of tabulations that describe the probability of dying, the death rate and the number of survivors for each age or age group. WHO has developed a model life table based on about 1800 life tables from vital registration judged to be of good quality.</td>
</tr>
</tbody>
</table>

H. Health outcomes: disease-specific indicators

16. Morbidity and mortality for:
   a. All cancers
   b. Cardiovascular disease
   c. Respiratory disease
   d. HIV/AIDS
   e. Homicide
   f. Mental illness

<table>
<thead>
<tr>
<th>Definition (A)</th>
<th>Cause-specific morbidity expressed as the number of cases with specified condition per 100,000 population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator (A)</td>
<td>Number of people with specified condition, measured at a specified point in time (point prevalence).</td>
</tr>
<tr>
<td>Denominator (A)</td>
<td>Total population at the indicated point in time (point prevalence).</td>
</tr>
<tr>
<td>Calculation (A)</td>
<td>((\text{Numerator}/\text{Denominator}) \times 100,000)</td>
</tr>
<tr>
<td>Note</td>
<td>Age-standardize, when appropriate (see reference below).</td>
</tr>
<tr>
<td>Definition (B)</td>
<td>Cause-specific mortality expressed as the number of cases per 100,000 population.</td>
</tr>
<tr>
<td>Numerator (B)</td>
<td>Number of deaths attributable to specified cause during a specified period.</td>
</tr>
<tr>
<td>Denominator (B)</td>
<td>Total population at risk during the indicated period.</td>
</tr>
<tr>
<td>Calculation (B)</td>
<td>((\text{Numerator}/\text{Denominator}) \times 100,000)</td>
</tr>
<tr>
<td>Note</td>
<td>Age-standardize, when appropriate (see reference below).</td>
</tr>
</tbody>
</table>

Recommended disaggregation variables

| Sex, age, income, education, local area. |

Possible data sources

| Case notifications (from health facilities, law enforcement), surveys, vital registration, census. |

Comments

- The indicators for HIV/AIDS relate to MDG 18 (HIV prevalence among pregnant women aged 15–24 years); the indicators for homicide relate to the United Nations Common Country Assessment Indicator Framework’s indicator 43 (number of intentional homicides per 100,000 inhabitants).
- A distinction should be made between notification rates (based on the number of cases that get notified or reported, for example by health facilities) and actual morbidity and mortality rates (based on the number of cases that actually occur, whether reported or not). Notification rates of conditions that are not routinely reported can be a gross underestimate of actual morbidity and mortality rates.
- In certain contexts, some of the specified conditions (such as HIV/AIDS or deaths attributable to mental illness) from an epidemiological perspective may be relatively rare events, which necessitates large sample sizes, or denominators, for direct estimates of morbidity and mortality levels.
- For those diseases/conditions for which the risk of illness or death varies considerably by age group, age standardization or disaggregation by age group is recommended. Note, however, for direct age-standardization using the WHO World Standard Population the study population must be large enough that age-specific rates within the population are stable.

Reference

### I. Social determinants of health: physical environment and infrastructure

#### 17. Households served by municipal solid waste management system

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of the population served by municipal solid waste management system expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of people (or households) served by municipal solid waste management system, measured at a specified point in time.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total population (or households) at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation</td>
<td>[(\text{Numerator} / \text{Denominator}) \times 100]</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Administrative data (from public/private agencies in charge of solid waste management), surveys, census.</td>
</tr>
</tbody>
</table>

#### 18. Solid fuel use

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of the population that relies on biomass (wood, charcoal, crop residues and dung) and coal as the primary source of domestic energy for cooking and heating expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of people (or households) using one or more unprocessed solid fuels (wood, charcoal, crop residues, dung, coal) as the primary source of domestic energy for cooking and heating, measured at a specified point in time.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total population (or households) at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation</td>
<td>[(\text{Numerator} / \text{Denominator}) \times 100]</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Surveys, census.</td>
</tr>
<tr>
<td>Comments</td>
<td>This corresponds to MDG indicator 29 (proportion of the population using solid fuels).</td>
</tr>
</tbody>
</table>

#### 19. Work-related injuries

<table>
<thead>
<tr>
<th>Definition (A)</th>
<th>Incidence rate of injury (fatal or non-fatal) due to a work exposure expressed as the number of cases per 100,000 working population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator (A)</td>
<td>Number of people with an injury (fatal or non-fatal) from a work exposure, measured at a specified point in time (point prevalence).</td>
</tr>
<tr>
<td>Denominator (A)</td>
<td>Total working population at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation (A)</td>
<td>[(\text{Numerator} / \text{Denominator}) \times 100,000]</td>
</tr>
</tbody>
</table>

**Definition (B)** Injury mortality (incidence rate of fatal injury) due to a work exposure expressed as the number of cases per 100,000 working population.

| Numerator (B)  | Number of deaths attributable to injury from a work exposure during a specified period. |
| Denominator (B)| Total working population at risk during the indicated period. |
| Calculation (B)| \[(\text{Numerator} / \text{Denominator}) \times 100,000\] |

**Recommended disaggregation variables** Sex, age, income, education, type of occupation, local area.

**Possible data sources** Workers’ compensation databases, occupational disease registers, coroner’s data, labour statistics, surveys.

**Comments**
- Some of the caveats of routine data sources for work-related injury/disease include that they usually only cover employees, they may exclude particular industry sectors explicitly (e.g., military personnel) or implicitly (e.g., a large number of agricultural workers are self-employed), they apply inconsistent inclusion criteria (e.g., homicides, suicides, commuting deaths) and, most importantly, they cover disease very poorly because the connection between occupational exposure and disease at an individual level is so hard to establish due to the multifactorial nature of diseases.
- The population at risk is usually obtained from official labour sources. These often do not include workers in the informal sector or child workers.

J. Social determinants of health: social and human development

20. Literacy

**Definition**
Proportion of the population aged 15 years and older who are literate, expressed as a percentage.

**Numerator**
Number of people aged 15 years and older who are literate (able to both read and write with understanding a short simple statement on everyday life), measured at a specified point in time. A common practice is to consider those with no schooling as illiterate and those who have attended grade 5 of primary school as literate.

**Denominator**
Total population aged 15 years and older at the indicated point in time.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Sex, age, income, local area.

**Possible data sources**
Census, surveys, school enrolment/completion statistics.

**Comments**
- This relates to MDG indicator 8 (youth literacy rate).
- The definition of literacy sometimes extends to basic arithmetic and other life skills.

21. Underweight children

**Definition**
Percentage of children under five years old whose weight-for-age is less than minus 2 standard deviations from the median for the international reference population ages 0–59 months.

**Numerator**
Number of children under five whose weight-for-age is less than minus 2 standard deviations from the median for the international reference population ages 0–59 months, measured at a specific point in time.

**Denominator**
Total number of children under age five at the indicated point in time.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Child’s sex and age, household income, mother’s education, local area (ideally by mother’s usual place of residence and not by place of child birth).

**Possible data sources**
Surveys, health service records.

**Comments**
- “Exclusive breastfeeding” is defined as no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for six months of life, but allows the infant to receive oral rehydration solution, drops and syrups (vitamins, minerals and medicines).
- This corresponds to MDG indicator 4 (prevalence of underweight children under five).
- This definition of underweight includes both moderate underweight (defined as 2–3 standard deviations below the median weight-for-age of the reference population) and severe underweight (defined as more than 3 standard deviations below the median).
- Whenever possible, all three indicators of child malnutrition should be analysed and presented, as they measure and reflect different aspects of child malnutrition: low weight-for-age (i.e. underweight); low height-for-age (i.e. stunting), defined as minus 2 standard deviations from the median height for the age of the reference population; and low weight for height (i.e. wasting), defined as below minus 2 standard deviations from the median weight for the height of the reference population.

22. Overweight and obesity

**Definition**
Proportion of adult population classified as overweight or obese expressed as a percentage.

**Numerator**
Number of adults classified as overweight, defined as body mass index (BMI) ≥ 25 kg/m²; or obese, defined as BMI ≥ 30 kg/m², measured at a specific point in time.

**Denominator**
Total population of adults at the indicated point in time.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Sex, age, income, education, local area.

**Possible data sources**
Surveys, census, health service records.

23. Breastfeeding

**Definition**
Proportion of infants under six months of age who are fed exclusively on breast milk, expressed as a percentage.

**Numerator**
Number of infants under six months of age who are fed exclusively on breast milk, measured at a specific point in time.

**Denominator**
Total number of infants under six months at the indicated point in time.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Child’s sex, household income, mother’s education, local area (ideally by mother’s usual place of residence and not by place of child birth).

**Possible data sources**
Surveys, health service records.

**Comments**
- “Exclusive breastfeeding” is defined as no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for six months of life, but allows the infant to receive oral rehydration solution, drops and syrups (vitamins, minerals and medicines).
- This relates to MDG indicator 8 (youth literacy rate).
- The definition of literacy sometimes extends to basic arithmetic and other life skills.

**Reference**
### 24. Teenage pregnancy

<table>
<thead>
<tr>
<th>Definition</th>
<th>Prevalence of adolescent pregnancy expressed as a proportion per 1000 females aged 15–19 years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of pregnancies (resulting in live births, still births and therapeutic abortions) per 1000 females aged 15–19 years, occurring during a specified period.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total number of females aged 15–19 years during the indicated period.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Household income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Health service records, surveys, census.</td>
</tr>
</tbody>
</table>

### 25. Physical activity

<table>
<thead>
<tr>
<th>Definition</th>
<th>Prevalence of insufficient physical activity expressed as a percentage of adults who are physically inactive.</th>
</tr>
</thead>
</table>
| Numerator | Number of adults not meeting any of the following criteria, measured at a specified point in time:  
Three or more days of vigorous-intensity activity of at least 20 minutes per day; OR  
Five or more days of moderate-intensity activity or walking of at least 30 minutes per day; OR  
Five or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week. |
| Denominator | Total number of adults at the indicated point in time. |
| Calculation | \( \frac{\text{Numerator}}{\text{Denominator}} \times 100 \) |
| Recommended disaggregation variables | Sex, age, income, education, local area. |
| Possible data sources | Surveys, census. |
| Comments | - Metabolic equivalent (MET) is the ratio of a person’s working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal/kg/hour.  
- Moderate-intensity activity refers to activities that take moderate physical effort and that make a person breathe much harder than normal. Examples include dusting, vacuuming, polishing, gardening, cycling at a regular pace or horse riding. Moderate intensity activities require an energy expenditure of approximately 3–6 METs.  
- Vigorous-intensity activity refers to activities that take hard physical effort and that make a person breathe much harder than normal. Examples include loading furniture, digging, playing football, tennis or fast swimming. Vigorous activities require an energy expenditure greater than 6 METs. |

### K. Social determinants of health: economics

#### 26. Poverty

<table>
<thead>
<tr>
<th>Definition</th>
<th>Percentage of the national population whose incomes are below the official threshold (or thresholds) set by the national government, also known as the poverty headcount ratio.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of people below the poverty line, measured at a specific point in time. This is calculated by estimating the number of households that are below the poverty line, then aggregating the number of people in those households.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total population at the indicated point in time.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Household head’s sex, age and education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Surveys, census, administrative data.</td>
</tr>
</tbody>
</table>
| Comments | - This corresponds to MDG indicator 1A (poverty headcount ratio).  
- National poverty lines are usually set for households of various compositions to allow for different family sizes. Where there are no official poverty lines, they may be defined as the level of income required to have only sufficient food or food plus other necessities for survival. |

#### 27. Women in workforce

<table>
<thead>
<tr>
<th>Definition</th>
<th>Participation of women in the workforce, expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator</td>
<td>Number of women in paid employment during a specific reference period.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Total number of people in paid employment during the indicated period.</td>
</tr>
<tr>
<td>Calculation</td>
<td>( \frac{\text{Numerator}}{\text{Denominator}} \times 100 )</td>
</tr>
<tr>
<td>Recommended disaggregation variables</td>
<td>Age, income, education, local area.</td>
</tr>
<tr>
<td>Possible data sources</td>
<td>Population censuses, labour force surveys, enterprise censuses and surveys, administrative records of social insurance schemes.</td>
</tr>
</tbody>
</table>
| Comments | - This relates to MDG indicator 11 (share of women in wage employment in the non-agricultural sector). However, in general, it is not considered necessary to differentiate this indicator by sector given the low contribution of agriculture to the economic output of an urban area.  
- Different data sources may use different definitions for employment status (e.g. part-time workers, students, members of the armed forces and household or contributing family workers) and have different data coverage (e.g. only covering large private and public sector employers). |
| Reference | - National poverty lines are usually set for households of various compositions to allow for different family sizes. Where there are no official poverty lines, they may be defined as the level of income required to have only sufficient food or food plus other necessities for survival. |

- This corresponds to MDG indicator 1A (poverty headcount ratio).  
- National poverty lines are usually set for households of various compositions to allow for different family sizes. Where there are no official poverty lines, they may be defined as the level of income required to have only sufficient food or food plus other necessities for survival. |
28. Secure tenure

**Definition**
The proportion of households with access to secure tenure expressed as a percentage.

**Numerator**
Number of (urban) households that own or are purchasing their homes, are renting privately or are in social housing or subtenancy, measured at a specific point in time. (This indicator can also be computed as 1 minus the percentage of the urban population that lives in slums.)

**Denominator**
Total number of (urban) households at the indicated time.

**Calculation**
\[
\text{(Numerator/Denominator) \times 100}
\]

**Recommended disaggregation variables**
Household head’s sex, age and education, household income, local area.

**Possible data sources**
Surveys, census, health service records.

**Comments**
- This corresponds to MDG indicator 32 (proportion of households with access to secure tenure).
- Households without secure tenure are defined as squatters (whether or not they pay rent), homeless and households with no formal agreement.
- The United Nations Human Settlement Programme (UN-Habitat) defines a slum household as a group of individuals living under the same roof who lack one or more (in some cities, two or more) of the following conditions: security of tenure, structural quality and durability of dwellings, access to safe water, access to sanitation facilities and sufficient living area.

L. Social determinants of health: governance

29. Voter participation

**Definition**
Proportion of eligible voters who voted in the most recent local/national elections expressed as a percentage.

**Numerator**
Number of eligible voters who voted in the most recent local/national elections.

**Denominator**
Total number of eligible voters in the most recent local/national elections.

**Calculation**
\[
\text{(Numerator/Denominator) \times 100}
\]

**Recommended disaggregation variables**
Sex, age, income, education, local area.

**Possible data sources**
Administrative records, census.

Reference

30. Insurance coverage

**Definition**
Proportion of population covered by any type of health insurance expressed as a percentage.

**Numerator**
Number of people covered by any social, private or community-based health insurance scheme during a specified reference period.

**Denominator**
Total population during the indicated period.

**Calculation**
\[
\text{(Numerator/Denominator) \times 100}
\]

**Recommended disaggregation variables**
Sex, age, education, income, local area.

**Possible data sources**
Administrative records, insurance records, surveys, census.

M. Social determinants of health: physical environment and infrastructure

31. Alcohol outlets

**Definition**
Alcohol outlet density expressed as the number of alcohol outlets per 100 000 population.

**Numerator**
Number of alcohol outlets measured over a specified geographical area at a specified point in time.

**Denominator**
Total population in the same geographical area at the indicated point in time.

**Calculation**
\[
\text{(Numerator/Denominator) \times 100 000}
\]

**Recommended disaggregation variables**
Neighbourhood income/education level, local area.

**Possible data sources**
Alcohol outlet licensing data, census.
31. Green spaces

**Definition**
Proportion of (urban) land area covered by green spaces expressed as a percentage.

**Numerator**
Total (urban) land area covered by green spaces, measured at a specified point in time.

**Denominator**
Total (urban) land area at the indicated point in time.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Neighbourhood education/income level, local area.

**Possible data sources**
Administrative data, land surveys.

**Comments**
Urban green spaces are defined as public green spaces located in urban areas, mainly covered by vegetation (as opposed to other open spaces) which are directly used for active or passive recreation, or indirectly used by virtue of their positive influence on the urban environment, accessible to citizens, serving the diverse needs of citizens and thus enhancing the quality of life in cities or urban regions.

**Reference**

32. Domestic violence

**Definition (A)**
Prevalence of intimate partner violence against women expressed as a percentage.

**Numerator (A)**
Number of women who experienced acts of physical, sexual and emotional abuse by a current or former intimate male partner, whether cohabiting or not, during a specified reference period.

**Denominator (A)**
Population of women during the indicated reference period.

**Calculation (A)**
\[(\text{Numerator (A)}/\text{Denominator (A)}) \times 100\]

**Recommended disaggregation variables**
Sex, age, income, education, local area.

**Possible data sources**
Vital registration systems, coroner’s reports, health and social service records, police/judiciary records, surveys.

**Comments**
A distinction should be made between notification or detection rates (based on the number of cases that get notified or reported, for example to social services) and actual incidence or prevalence rates (based on the number of cases that actually occur, whether detected or not). Notification rates for domestic violence are often a gross underestimate of actual incidence and prevalence rates.

**Reference**

33. Low birthweight

**Definition**
Proportion of liveborn infants that weigh less than 2500 grams, for a given time period, expressed as a percentage.

**Numerator**
Number of liveborn infants with a weight of less than 2500 grams (up to and including 2499 grams), irrespective of gestational age, for a specified time period.

**Denominator**
Total number of live births in the indicated time period.

**Calculation**
\[(\text{Numerator}/\text{Denominator}) \times 100\]

**Recommended disaggregation variables**
Child’s sex, mother’s education, household income, local area (ideally by mother’s usual place of residence and not by place of child birth).

**Possible data sources**
Health service records, vital registration systems, survey, census.

**Comments**
Birthweight is the first weight of the fetus or newborn obtained after birth. For live births, birthweight should ideally be measured within the first hour of life before significant postnatal weight loss occurs.
O. Social determinants of health: economics

34. Slum population

Definition
Proportion of urban population living in slum households expressed as a percentage.

Numerator
Number of individuals living in (urban) slum households defined as a group of individuals living under the same roof who lack one or more (in some cities, two or more) of the following conditions: security of tenure, structural quality and durability of dwellings, access to safe water, access to sanitation facilities and sufficient living area.

Denominator
Total (urban) population at the indicated time.

Calculation
\[
\frac{\text{Numerator}}{\text{Denominator}} \times 100
\]

Recommended disaggregation variables
Neighbourhood income and education level, local area.

Possible data sources
Surveys, census.

Comments
This relates to MDG indicator 32 (proportion of households with access to secure tenure), which can be computed as 1 minus the percentage of the urban population that lives in slums.

35. Informal employment

Definition
Proportion of the working population in informal employment expressed as a percentage.

Numerator
Number of people classified as employed in the informal sector in their main or second jobs during a specified period.

Denominator
Total number of people employed during the indicated period.

Calculation
\[
\frac{\text{Numerator}}{\text{Denominator}} \times 100
\]

Recommended disaggregation variables
Sex, age, income, education, local area, type of economic activity.

Possible data sources
Informal sector surveys, labour surveys, census.

Comments
• This corresponds to the United Nations Common Country Assessment Indicator Framework’s indicator 32 (informal sector employment as a percentage of employment).
• Informal sector employment includes all people who, during a given reference period, were employed in at least one informal sector enterprise, irrespective of their status in employment (employer, own-account worker, contributing family worker, employee or member of a producers cooperative) or whether it was their main or second job.
• Informal sector enterprises are defined by the following criteria: they are household unincorporated enterprises (excluding quasi-corporations) as defined by the System of National Accounts 1993; they produce at least some of their goods or services for sale or barter; they are engaged in non-agricultural activities (including secondary non-agricultural activities of enterprises in the agricultural sector); and their size (in number of employees) is below a specified threshold, determined according to national circumstances, or they are not registered under specific forms of national legislation (such as commercial acts, tax or social security laws, professional groups, regulatory acts, or similar acts, laws or regulations established by national legislative bodies); or none of their employees is registered. Households producing domestic or personal services in employing paid domestic employees may be included.
• Employed means being engaged in an economic activity during a specified reference period or being temporarily absent from such an activity.
• Economic activity refers to all production of goods and services for pay or profit or for use by own household.

P. Social determinants of health: governance

36. Government spending on education

Definition
Total public expenditure on education expressed as a percentage of total government expenditure in a given financial year.

Numerator
Total public expenditure on education (current and capital) incurred by all government agencies/departments in a given financial year.

Denominator
Total government expenditure for the indicated financial year.

Calculation
\[
\frac{\text{Numerator}}{\text{Denominator}} \times 100
\]

Recommended disaggregation variables
Local area.

Possible data sources
National accounts reports, public expenditure reports, global financial statistics.

Reference
ANNEX IV: PRODUCING THE URBAN HEART MATRIX – TECHNICAL ADVICE

WHY DO IT?
A basic MATRIX is a colour-coded chart that helps you to see inequities across multiple indicators. The MATRIX does not track inequities over time. The steps below describe the process to develop a MATRIX for within-city comparisons but you could also produce comparisons between cities, if you have data for multiple cities.

WHAT YOU WILL NEED
- Charting/graphing/spreadsheet software (e.g. Microsoft Excel).
- Indicator data, disaggregated by geographical unit (required) and by other sociodemographic variables, such as gender, income, education (optional).
- Internal benchmark for each indicator, e.g. national average, city average.
- Desired target for each indicator, such as MDGs 2015, national targets, performance levels of highest-income group.

WHAT TO DO?
1. Decide on the reporting year and the units of comparison for your matrix. The MATRIX describes just one year at a time, and just one type of disaggregation variable. The most common disaggregation variables to use are geographical districts in your city, such as neighbourhoods or wards or census tracts. If you have the available data, you could report on gender groups, or income groups, or linguistic groups or some other variable.

2. Label the data columns and data rows. Open a new spreadsheet, using Microsoft Excel or another graphing/charting software. First, label the columns. Use the names of the units you will be comparing (e.g. the districts, wards within your city). Next, label the rows. Use the first column to label each policy domain you will look at (e.g. health outcomes, social and human development, governance). In the second column, enter the names of each indicator that you will look at (make sure the indicators correspond to the correct policy domain).

Example: This MATRIX will compare four districts on four indicators, representing three policy domains.

<table>
<thead>
<tr>
<th>District A</th>
<th>District B</th>
<th>District C</th>
<th>District D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health outcomes</td>
<td>Infant mortality (per 1000 live births)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical infrastructure &amp; environment</td>
<td>Access to safe water (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social &amp; human development</td>
<td>Completion of primary education (%)</td>
<td>Fully immunized children (%)</td>
<td></td>
</tr>
</tbody>
</table>
3. Add columns for benchmarks and targets. Start with benchmarks. Add a column to the right-hand side of the table for internal benchmarks. You should choose the most relevant internal benchmark for each indicator (for tips, see step 2, User Manual). You may decide to use different types of benchmarks for different indicators (e.g. the city average for safe water access, but the national average for immunization or education). If you use different benchmarks, simply label the column header “Benchmark”. Then use footnotes to identify the source of each of your benchmarks.

Now, add an additional column on the right-hand side of the table for external targets. You should choose targets that are most relevant for each indicator. Options include MDGs, a national target, city target or some other desirable numeric target. Importantly, the desired target must be a higher standard than the internal benchmark. Label the targets using the column header or footnotes.

4. Enter data into the cells. Start with the first indicator. Working across the columns, enter the numeric values for the indicator into their appropriate cells. For example, if you start with infant mortality per 1000 live births, then you should enter the infant mortality rate for each district. If you do not have data for a particular cell, leave it blank or enter a non-numeric code. Work across, row by row, until you are done. Double-check your work.

Example: The cells have been filled with the correct value for each indicator per district. Data for “completion of primary education (%)” were not available for District D.

<table>
<thead>
<tr>
<th></th>
<th>District A</th>
<th>District B</th>
<th>District C</th>
<th>District D</th>
<th>City average</th>
<th>National targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant mortality</td>
<td>22</td>
<td>19</td>
<td>21</td>
<td>41</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>(per 1000 live births)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical infrastructure &amp; environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to safe water</td>
<td>88</td>
<td>58</td>
<td>89</td>
<td>58</td>
<td>83</td>
<td>100</td>
</tr>
<tr>
<td>(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social &amp; human development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion of primary education (%)</td>
<td>85</td>
<td>78</td>
<td>89</td>
<td>n.a.</td>
<td>84</td>
<td>85</td>
</tr>
<tr>
<td>Fully immunized children (%)</td>
<td>75</td>
<td>70</td>
<td>71</td>
<td>62</td>
<td>65</td>
<td>80</td>
</tr>
</tbody>
</table>

4. Colour-code the data cells using RED. RED indicates performance that is worse than the internal benchmark. Beginning with the first row, compare each of the cell values in your city data against the internal benchmark. Apply RED colour on the cell if the value is worse than the internal benchmark. Remember that for some indicators, a smaller value indicates better performance while for others a smaller value indicates worse performance. You are coding for worse performance when you use the colour RED. Work across, row by row, until you are done. Double-check your work.

Example: Five cells have been coloured RED, signifying performance that is worse than the city average. District D has worse infant mortality, worse access to safe water and worse coverage for child immunization, compared to the city averages. District B has worse access to safe water and completion rate of primary education compared to the city average.

<table>
<thead>
<tr>
<th></th>
<th>District A</th>
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<th>District C</th>
<th>District D</th>
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</tr>
<tr>
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<tr>
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<td>71</td>
<td>62</td>
<td>65</td>
<td>80</td>
</tr>
</tbody>
</table>

6. Colour-code the data cells using GREEN. GREEN indicates performance that is equal to or better than both the internal benchmark and the desired target. If the value is equal to or better than the desired target, apply the colour GREEN. Work across, row by row, until you are done. Double-check your work.

Example: Two cells are GREEN. Districts A and C have better primary school rates than the national target.

<table>
<thead>
<tr>
<th></th>
<th>District A</th>
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<th>District C</th>
<th>District D</th>
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<td>71</td>
<td>62</td>
<td>65</td>
<td>80</td>
</tr>
</tbody>
</table>
7. Colour-code the remaining data cells using YELLOW. YELLOW indicates performance that is equal to or better than the internal benchmark, yet lower than the desired target. Examine each cell that is not RED or GREEN. The value should be equal to or better than the internal benchmark. Remember that for some indicators, a smaller value indicates better performance while for others a smaller value indicates worse performance. If the value is worse than the target, apply the colour YELLOW. Work across, row by row, until you are done. Double-check your work.

Example: Eight cells have been coloured YELLOW, signifying performance that is better than the city average but still worse than the national target.

<table>
<thead>
<tr>
<th>District A</th>
<th>District B</th>
<th>District C</th>
<th>District D</th>
<th>City average</th>
<th>National targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant mortality (per 1000 live births)</td>
<td>22</td>
<td>19</td>
<td>21</td>
<td>41</td>
<td>26</td>
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</tr>
<tr>
<td>Completion of primary education (%)</td>
<td>84</td>
<td>78</td>
<td>89</td>
<td>n.a.</td>
<td>84</td>
</tr>
<tr>
<td>Fully immunized children (%)</td>
<td>75</td>
<td>70</td>
<td>71</td>
<td>62</td>
<td>65</td>
</tr>
</tbody>
</table>

8. Check your work again. When you have finished steps 6–8, all of the data cells should be RED, YELLOW or GREEN unless the data are not available. Cells with missing data can remain white. Now, you should check your data entry and colour coding again for accuracy. Assuming the data cleaning and validation were already performed prior to developing the MATRIX, at this point check for things like:

• Are the data entered in the correct cells? (Check both column-wise and row-wise.)
• Are the cells coloured correctly in relation to the internal benchmarks and desired targets?
• Are there any blank or white cells that are not missing data?

9. Customize the MATRIX (optional). Steps 1 through 8 describe how to produce the basic MATRIX. If you want to go further, there are several ways to customize the MATRIX to meet specific needs. Here are some examples of what you can do:

• Compare indicator data by gender or by socioeconomic group within the city or within districts. Check if you have the necessary data to do this.
• If you see a wide range of numeric values within the red cells (or green or yellow), you could expand the spectrum of colour codes to allow for a more detailed assessment.
• Various software programmes can be used to visually enhance the MATRIX for presentations.
WHY DO IT?
After you have produced the MATRIX, you will be able to identify the districts that are performing best and worst for each Urban HEART indicator. You can now develop the MONITOR to track the health equity gap in your city (the gap between best and worst performance) over time and to assess progress against an equity target. The steps below describe the process to develop the basic MONITOR for your city. If you have performance data for multiple cities, you can also use the basic MONITOR to track an equity gap between cities in a region or country.

WHAT YOU WILL NEED
• Charting/graphing/spreadsheet software (e.g. Microsoft Excel).
• Indicator data, disaggregated by geographical unit (required) and by other sociodemographic variables, such as gender, income, education (optional).
• Internal benchmark for each indicator, such as national average, city average.
• Desired target for each indicator, such as MDGs 2015, national targets, performance levels of highest-income group.
• Longitudinal data (repeated measurements of the indicator over time). Make sure your data span a sufficient length of time to assess change. Some indicators may take longer to change than others. Check with experts on your team.

WHAT TO DO?
1. Decide on the indicator you want to monitor over time and the years you will analyse. Based on team discussions and consultations with stakeholders, determine which indicator is important enough to monitor over time. Choose an indicator for which data have been collected on several occasions. In the examples below, we use the indicator “skilled birth attendance”, which is an indicator in the social and human development policy domain. Select the years you will analyse. In the examples below, we used data from 1990, 1995, 2000 and 2005.

2. Decide on your internal benchmark. An “internal benchmark” will serve as a relevant, comparable, reference point for understanding district performance on an indicator. Importantly, the benchmark should represent a particular year. For example, you may choose to use the national average or city average for a particular year. In the examples below, we used the yearly city average in 1990 as the internal benchmark. It is the lowest city average for the reporting period, and serves as a baseline measure.

3. Identify a relevant target. What is the relevant performance target for this indicator? You may decide to choose the MDG, a national target, city target, or some other desirable numeric target, preferably with a time reference. Importantly, the desired target must be a higher standard than the internal benchmark. In the examples below, we used the 2010 national target for skilled birth attendance.

4. Label your data columns and data rows. This process is similar to developing the MATRIX. Open a new spreadsheet, using Microsoft Excel or another charting/graphing software, and create a new data table. You will need six columns. Label the columns as shown in the example below: Column 1 is labelled “Year”; column 2 is labelled “Worst district performance”; column 3 is labelled “Best district performance”; column 4 is the internal benchmark. In the example, it is labelled “City average 1990”. Use your own internal benchmark title. Column 5 is the target. In the example below, it is labelled “National average 2010”. Use your own target title.

Next, label each row with the names of the years you will analyse. Start with the earliest year. The most recent year should be the last row.

Example: The data table has been set up for a 15-year analysis of inequity in the proportion of births attended by skilled health personnel. The table looks at four data points: 1990, 1995, 2000, 2005.

Table A. Inequity in skilled birth attendance in City A, 1990–2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Worst district performance</th>
<th>Best district performance</th>
<th>City average</th>
<th>Benchmark: City average 1990</th>
<th>Target: National average 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Enter data into the cells. Start with your target. Enter that value in the far right column. Then enter internal benchmark data (e.g., the city average) for each year. Then turn to your dataset for your city districts, and identify the best and worst performance rates for each year. Enter these values into the appropriate cells. Work across, row by row, until you are done. Double-check your work.

Example: The appropriate indicator data have been entered in all cells.

### Table A. Inequity in skilled birth attendance in City A, 1990–2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Worst district performance</th>
<th>Best district performance</th>
<th>City average</th>
<th>Benchmark: City average 1990</th>
<th>Target: National average 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>19%</td>
<td>80%</td>
<td>50%</td>
<td>50%</td>
<td>90%</td>
</tr>
<tr>
<td>1995</td>
<td>10%</td>
<td>45%</td>
<td>33%</td>
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<tr>
<td>2000</td>
<td>30%</td>
<td>86%</td>
<td>60%</td>
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<tr>
<td>2005</td>
<td>20%</td>
<td>95%</td>
<td>55%</td>
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<td></td>
</tr>
</tbody>
</table>

Remember: for the purposes of the MONITOR, the district names do not matter and the names do not need to be recorded in the data table (although you may want to keep track of them in another document). It is possible that the worst (and best) performing districts will vary over the years. This is not a problem. The columns do not represent any one particular district; rather they represent best and worst rates of performance on the chosen indicator, wherever that performance takes place. If you want to look at a particular district over time, you can take steps to modify the MONITOR (see step 11, below).

6. Colour-code the data cells using RED. This is the same process followed to colour-code the MATRIX. RED indicates performance that is worse than the internal benchmark. Beginning with the first row, compare the cell values in your district data against the internal benchmark. Apply RED colour on the cell if the value is worse than the internal benchmark. Remember that for some indicators, a smaller value indicates better performance while for others a smaller value indicates worse performance. You are coding for worse performance when you use the colour RED. Work across, row by row, until you are done. Double-check your work.

Example: Six cells have been coloured RED.

### Table A. Inequity in skilled birth attendance in City A, 1990–2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Worst district performance</th>
<th>Best district performance</th>
<th>City average</th>
<th>Benchmark: City average 1990</th>
<th>Target: National average 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>19%</td>
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<td></td>
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<td>2005</td>
<td>20%</td>
<td>95%</td>
<td>55%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Next, colour-code the data cells using GREEN. GREEN indicates performance that is equal to or better than both the internal benchmark and the desired target. Examine each cell that is neither RED nor YELLOW. If the value is equal to or better than the desired target, apply the colour GREEN. Work across, row by row, until you are done. Double-check your work.

Example: Only one cell is GREEN. Only one district has ever achieved the national target of 90% coverage.

### Table A. Inequity in skilled birth attendance in City A, 1990–2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Worst district performance</th>
<th>Best district performance</th>
<th>City average</th>
<th>Benchmark: City average 1990</th>
<th>Target: National average 2010</th>
</tr>
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</tr>
</tbody>
</table>

Remember: for the purposes of the MONITOR, the district names do not matter and the names do not need to be recorded in the data table (although you may want to keep track of them in another document). It is possible that the worst (and best) performing districts will vary over the years. This is not a problem. The columns do not represent any one particular district; rather they represent best and worst rates of performance on the chosen indicator, wherever that performance takes place. If you want to look at a particular district over time, you can take steps to modify the MONITOR (see step 11, below).

8. Colour-code the remaining data cells using YELLOW. Examine each value that is not RED (including the internal benchmark values). Each value should be equal to or better than the internal benchmark. If the value is worse than the target, apply the colour YELLOW. Work across, row by row, until you are done. When you are done, every cell in the data table should be coloured, unless data were not available. Double-check your work.

Example: Five cells are YELLOW. With one exception (2005), skilled birth attendance in even the best-performing districts of the city has never reached the 2010 Target.

### Table A. Inequity in skilled birth attendance in City A, 1990–2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Worst district performance</th>
<th>Best district performance</th>
<th>City average</th>
<th>Benchmark: City average 1990</th>
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Remember: for the purposes of the MONITOR, the district names do not matter and the names do not need to be recorded in the data table (although you may want to keep track of them in another document). It is possible that the worst (and best) performing districts will vary over the years. This is not a problem. The columns do not represent any one particular district; rather they represent best and worst rates of performance on the chosen indicator, wherever that performance takes place. If you want to look at a particular district over time, you can take steps to modify the MONITOR (see step 11, below).

9. Double-check your work. Check the accuracy and validity of data entry and colour coding (see step 8 in creating the MATRIX for tips on what to check).
10. **Create a basic graph.** Now create a graph to visualize the MONITOR results. The specific instructions for creating the graph will vary depending on the graphing application you use. Here we give basic instructions for creating the graph using Microsoft Excel 2007.

- On the data Table A, select columns 2, 3 and 4, including the column labels. From the "Charts" drop-down menu, choose the category "Stock Charts". Click on the "High-Low-Close" chart.

**Example:** By using the data table constructed in previous steps and following the above instructions for creating a graph in Microsoft Excel 2007, we can produce a very basic graph.

![Basic Graph](image)

11. **Make Urban HEART MONITOR modifications.** The basic graph above can be modified to produce an Urban HEART MONITOR. Make these modifications:

- Enter the year of data for each observation.
- Assign markers to the data points: Circles for the average measures, Diamonds for the best-performing units, Squares for the worst-performing units.
- Colour-code the markers according to the data table.
- Add lines to indicate the internal benchmark and desired target.

**Example:**

![Urban HEART MONITOR](image)

12. **Customizing the MONITOR (optional).** Steps 1 through 10 described how to create the basic MONITOR. There are several ways in which you can go beyond the basic MONITOR or customize the MATRIX to meet specific needs. Here are some examples of what you can do:

- Compare indicator data by gender or by socioeconomic group within the city or within districts. Check if you have the necessary data to do this.
- If you see a wide range of numeric values within the red cells (or green or yellow), you could expand the spectrum of colour codes to allow for a more detailed assessment.
- Various software programmes can be used to visually enhance the MONITOR for presentations.
Teams and stakeholders can review the results of the MATRIX and MONITOR in a number of ways, to prioritize equity issues. Some basic approaches are illustrated in the scenarios below.

A. Begin with stakeholders’ priority concerns. When it is time to share Urban HEART evidence with stakeholders, a good way to start is by reviewing the indicators that matter most to them.

• In scenario 1, stakeholders had identified tobacco control as a major priority. The MATRIX showed that prevalence of tobacco smoking was higher than the national average in three of the six neighbourhoods (in red). Other neighbourhoods had achieved the desired target level (in green). Based on these results, stakeholders decided to investigate tobacco use in the vulnerable neighbourhoods in more depth (and to look for possible lessons from the healthier neighbourhoods). They prioritized response strategies to promote smoking cessation in the vulnerable neighbourhoods.
In scenario 2, stakeholders were particularly interested in child mortality trends among cities within a large urban region. The MONITOR showed the under-five mortality in the worst performing city (represented by squares) was consistently higher than the regional average (circles) and the best-performing cities in the region (diamonds). Moreover, the mortality rate was improving more slowly than in other cities in the region. Stakeholders decided to change the approach to children’s health services in City A.

Scenario 2: Focusing on child mortality in City A

B. Find priorities that emerge from the evidence. Another option is to examine the MATRIX broadly for problem clusters, and then trace these back to the specific indicators, policy domains or neighbourhoods requiring attention. This is a more inductive approach. It may be a very appropriate approach for intersectoral teams that are willing to work together to address highest-priority equity issues that emerge from the evidence.

In scenario 3, team members observed that the economic policy domain stood out. It had the biggest cluster of red and yellow squares, indicating poor and at-risk performance. Moreover, the problems in the economic domain were widespread, affecting most cities in the region. The team also noted that all of the economic indicators reflected problems. The team decided to do more research into the causes and consequences of the economic problems. In step 6, they chose response strategies to target economic issues at the regional level.

Scenario 3: Discovering that the economic policy domain is most problematic

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>City A</th>
<th>City B</th>
<th>City C</th>
<th>City D</th>
<th>City E</th>
<th>City F</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLICY DOMAIN 1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to safe water</td>
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<tr>
<td>Access to improved sanitation</td>
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<tr>
<td>Road traffic injuries</td>
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<td></td>
</tr>
<tr>
<td>POLICY DOMAIN 2</td>
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<tr>
<td>Adult literacy rate</td>
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<tr>
<td>skilled birth attendance</td>
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<tr>
<td>domestic violence</td>
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<tr>
<td>POLICY DOMAIN 3</td>
<td></td>
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<td></td>
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<tr>
<td>women earning an income</td>
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<tr>
<td>households with secure tenure</td>
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<tr>
<td>POLICY DOMAIN 4</td>
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<td></td>
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<tr>
<td>participatory process in development projects</td>
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<td></td>
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<tr>
<td>government budget for health and education</td>
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</tbody>
</table>
## ANNEX VII: URBAN HEART EQUITY RESPONSE STRATEGIES

<table>
<thead>
<tr>
<th>POLICY DOMAIN 1: PHYSICAL ENVIRONMENT AND INFRASTRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incorporate health in urban planning and development</strong></td>
</tr>
<tr>
<td>Water, sanitation and waste management</td>
</tr>
<tr>
<td>Promote knowledge of safe water storage, sanitation and personal hygiene practices</td>
</tr>
<tr>
<td>Ensure adequate water supply for washing and bathing</td>
</tr>
<tr>
<td>Support construction of household latrines</td>
</tr>
<tr>
<td>Promote proper food storage practices</td>
</tr>
<tr>
<td>Provide community water supply and infrastructure</td>
</tr>
<tr>
<td>Improve drainage for wastewater</td>
</tr>
<tr>
<td>Build more footpaths</td>
</tr>
<tr>
<td>Provide facilities to promote handwashing</td>
</tr>
<tr>
<td>Provide technical support for improved house structure or extensions</td>
</tr>
<tr>
<td>Ensure availability of affordable materials to improve homes</td>
</tr>
<tr>
<td>Promote appropriate solid waste management practices at the household level (segregation, recycling, storage, etc.)</td>
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</tbody>
</table>

## POLICY DOMAIN 1: PHYSICAL ENVIRONMENT AND INFRASTRUCTURE

<table>
<thead>
<tr>
<th>POLICY DOMAIN 1: PHYSICAL ENVIRONMENT AND INFRASTRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate health in urban planning and development</td>
</tr>
<tr>
<td>Organize regular clean-up campaigns for vector control</td>
</tr>
<tr>
<td>Provide neighbourhood surface drainage systems</td>
</tr>
</tbody>
</table>
**POLICY DOMAIN 1. PHYSICAL ENVIRONMENT AND INFRASTRUCTURE**

<table>
<thead>
<tr>
<th>Incorporate health in urban planning and development</th>
<th>Emphasize and strengthen the role of urban primary health care</th>
<th>Strengthen the health equity focus on urban settings</th>
<th>Put health equity higher on the agenda of local governments</th>
<th>Pursue a national agenda</th>
</tr>
</thead>
</table>

**Housing, living conditions and neighbourhood environment**
- Provide information (e.g., posters, pamphlets) on how to improve stove design and home ventilation
- Housing, living conditions and neighbourhood environment
  - Advise households on how to reduce risks from defective housing
  - Identify groups at risk due to defective housing or vulnerability (older persons, disabled, persons living with HIV/AIDS) and provide additional support and assistance as needed
  - Develop educational programmes on safe household fuels, e.g., posters, pamphlets, brochures
  - Invite speakers from other sectors or communities to share their experience with alternative and safe indoor fuels
- Housing, living conditions and neighbourhood environment
  - Map out parts of the city where housing and living conditions are poor and make this a priority of a Healthy City project
  - Develop programmes for housing improvement that respond to the needs of older persons and the disabled
  - Develop safe and adequate housing conditions that reduce the incidence of injuries from falls and burns
  - Develop environment-friendly public transport, walking and cycling facilities and reduce the adverse health impacts of a car-dependent society as part of the healthy settings approach
  - Promote energy efficiency in all healthy settings
  - Develop municipal policy for energy efficiency with a focus on reducing urban consumption and promoting dependable, safer and cleaner alternative sources of energy
  - Organize “walking school bus” projects
  - Organize street clean-up campaigns for vector control
  - Allocate more open space for parks, green areas and places where children can play
  - Promote healthy marketplaces and food safety
- Housing, living conditions and neighbourhood environment
  - Involve the urban poor and the health sector in planning water and sanitation improvement
  - Guarantee supply of cheap and easily available building materials, fixtures and fittings, support for building advice centres in each neighbourhood
  - Provide more space for public facilities for handwashing and laundry
  - Strengthen capacity for equity impact assessment (health and environment) in all development projects
  - Involve the community in equity impact assessment activities

**Healthy transportation**
- Organize action to improve hygiene and safety in cottage industries and livelihood activities in informal settlements
- Develop appropriate transport systems for the injured, ill and otherwise disabled
- Ensure that walking, cycling and other forms of physical activity are accessible to and safe for all
- Develop and implement transport policies that promote active and safe methods of travelling to and from schools and workplaces, such as walking or cycling

**Healthy transportation**
- Coordinate with labour and employment sector on occupational safety in the community and cottage industries
- Initiate healthy workplace projects
- Lobby for municipal alcohol ordinances on zoning of liquor outlets and enforcement of laws on drinking and driving
- Organize campaigns for road safety
- Workplace blood alcohol concentration (BAC) testing in high injury risk workplaces

**Healthy transportation**
- Traffic safety measures such as speed control to be adopted
- Improved infrastructure that takes into account safety of pedestrians
- Make affordable, dependable and clean household energy alternatives available, especially in informal settlements, as a healthy community project
- Provide guidance to and support schools to establish partnerships with communities to open up and effectively utilize existing community recreation and sporting facilities, and vice versa

**Healthy transportation**
- Invest in public transportation
- Promote walking, cycling and other non-motorized forms of transportation
- Make walkability (ability to walk to food outlets, health facilities, parks) an index for good community development and planning
- Develop metropolitan policy for energy efficiency with a focus on reducing urban consumption and promoting dependable, safer and cleaner alternative sources of energy
- Improve road networks and remove traffic hazards

**Healthy transportation**
- Invest in and build capacity for supporting multisectoral action of local governments, police, transport sector, public infrastructure authorities and civic groups to reduce and prevent road injuries
### POLICY DOMAIN 1: PHYSICAL ENVIRONMENT AND INFRASTRUCTURE

<table>
<thead>
<tr>
<th>Incorporate health in urban planning and development</th>
<th>Emphasize and strengthen the role of urban primary health care</th>
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<th>Pursue a national agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop metrowide traffic management systems</td>
<td>Develop citywide sanitary waste disposal systems</td>
<td>Develop citywide drainage and flood control system</td>
<td></td>
</tr>
<tr>
<td>Air pollution</td>
<td>Air pollution</td>
<td>Air pollution</td>
<td></td>
</tr>
<tr>
<td>Identify sources of air pollution and seek limits to emissions</td>
<td>Develop citywide measures to reduce ambient air pollution and develop multisectoral strategies to achieve goals and targets</td>
<td>Integrate safe household fuels into the national primary health care programme and document the impact of household-level interventions on community health outcomes</td>
<td></td>
</tr>
</tbody>
</table>

### Climate change

- Map out the parts of the city that are most vulnerable to floods, landslides and extremes of temperature
- Develop a municipal adaptation plan for climate change
- Provide priority adaptation measures for the urban poor, e.g. provide them with alternative places to live
- Develop comprehensive air pollution reduction strategies and targets involving all sectors
- Highlight the need for cleaner indoor fuels and provide incentives for alternatives or ventilation improvement measures
- Shift to cleaner vehicular fuels, as appropriate
- Regulate the number of motor vehicles that can enter highly congested parts of the city
- Enforce pollution emission controls and involve the health sector in lobbying for stricter control measures

### Air pollution

- Develop citywide measures to reduce ambient air pollution and develop multisectoral strategies to achieve goals and targets
- Integrate safe household fuels into the national primary health care programme and document the impact of household-level interventions on community health outcomes

### Energy quality and efficiency

- Develop national policy that will make affordable, dependable and clean household energy alternatives more accessible to all urban households
- Develop national policy for energy efficiency with a focus on reducing urban consumption and promoting dependable, safer and cleaner alternative sources of energy
- Promote use of alternative fuels

- Undertake forecasting and predictive studies to understand how climate change may impact on urban areas
- Develop competency and capacity to advise metropolitan and local health systems on adaptation to climate change and its impacts on the urban poor
- Conduct research on how best to adapt to climate change with preference for conditions affecting the urban poor

- Develop national policy for energy efficiency with a focus on reducing urban consumption and promoting dependable, safer and cleaner alternative sources of energy
- Promote use of alternative fuels

- Map out vulnerabilities to climate change and develop urban and metropolitan adaptation plans
- Place high priority on groups with high vulnerability and limited resources for adaptation, e.g. the urban poor, informal settlements
- Develop and rationalize city referral systems for mass casualties, emergencies and disasters

- Undertake forecasting and predictive studies to understand how climate change may impact on urban areas
- Develop competency and capacity to advise metropolitan and local health systems on adaptation to climate change and its impacts on the urban poor
- Conduct research on how best to adapt to climate change with preference for conditions affecting the urban poor

- Develop national policy for energy efficiency with a focus on reducing urban consumption and promoting dependable, safer and cleaner alternative sources of energy
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- Integrate safe household fuels into the national primary health care programme and document the impact of household-level interventions on community health outcomes

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- Promote use of alternative fuels
### POLICY DOMAIN 1. PHYSICAL ENVIRONMENT AND INFRASTRUCTURE

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<th>Pursue a national agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Promote walking, cycling and other non-motorized forms of transportation</td>
<td>- Make walkability a national development goal for health, road safety and pollution reduction</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### POLICY DOMAIN 2. SOCIAL AND HUMAN DEVELOPMENT

<table>
<thead>
<tr>
<th>Incorporate health in urban planning and development</th>
<th>Emphasize and strengthen the role of urban primary health care</th>
<th>Strengthen the health equity focus in urban settings</th>
<th>Put health equity higher on the agenda of local governments</th>
<th>Pursue a national agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Make universal literacy a healthy city target</td>
<td>- Integrate literacy programmes in settings approaches, e.g. healthy workplaces, health-promoting schools</td>
<td>- Develop joint targets for literacy involving health, education and welfare sectors</td>
<td>- Ensure effective referral systems from primary to secondary and tertiary facilities</td>
<td>-</td>
</tr>
<tr>
<td>Human resource development</td>
<td>Human resource development</td>
<td>Human resource development</td>
<td>Human resource development</td>
<td>Human resource development</td>
</tr>
<tr>
<td>- Coordinate with education and welfare sector to integrate literacy programmes in primary health care training</td>
<td>- Map out inequity in education by district, gender and socioeconomic class and undertake measures to create fairer opportunities for literacy and education</td>
<td>- Develop city/district/province/statewide intersectoral plans to reduce education inequities</td>
<td>- Develop emergency preparedness and response mechanisms that consider the challenges posed by informal settlements in relation to sizes of streets, distance from main roads, lack of lighting and proper directions at night, etc.</td>
<td>-</td>
</tr>
<tr>
<td>Organize literacy programmes for all ages</td>
<td>Strengthen the health equity focus in urban settings</td>
<td>Put health equity higher on the agenda of local governments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Adapt Integrated Management of Childhood Illnesses (IMCI) to urban informal settlements</td>
<td>- Develop joint targets for literacy involving health, education and welfare sectors</td>
<td>- Link education equity programmes to job placement to ensure that those who receive education have fair opportunities for jobs as well</td>
<td>- Develop national strategies to enable local governments to acquire the resources and capacities to provide health care and information to the urban poor, particularly women, children and young people</td>
<td>-</td>
</tr>
</tbody>
</table>

### Urban health systems strengthening

- Invest in and support capacity building for urban primary health care, especially for the needs and health risks of urban poor populations
- Ensure effective referral systems from primary to secondary and tertiary facilities
- Develop emergency preparedness and response mechanisms that consider the challenges posed by informal settlements in relation to sizes of streets, distance from main roads, lack of lighting and proper directions at night, etc.
- Support social health insurance and community-based health insurance programmes organized for the urban poor

- Develop national strategies to enable local governments to acquire the resources and capacities to provide health care and information to the urban poor, particularly women, children and young people
- Improve coverage of the urban poor, particularly women, children and young people in national social health insurance schemes
- Develop national drug use prevention and harm reduction programmes
- Invest in enforcement of laws against drug trafficking
- Obtain disaggregated data within urban settings to derive intra-urban differentials and analyse these at both national and local levels
### POLICY DOMAIN 2. SOCIAL AND HUMAN DEVELOPMENT

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<td><strong>Urban health systems strengthening</strong></td>
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<tr>
<td>Develop focused and targeted national approaches for tuberculosis, HIV/AIDS, malaria, dengue and other debilitating diseases that have a predominantly urban focus and affect the urban poor</td>
<td>Ensure that the urban poor and informal settlements are part of local and national health censuses</td>
<td>Provide national technical guidance and support for patient support groups in the community and in health facilities for mental illness, depression and anxiety</td>
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<tr>
<td>Develop more effective national interventions that support community-based NCD control and ensure the implementation of STEPS in the urban setting</td>
<td>Establish and implement food-based dietary guidelines and support the healthier composition of food by reducing salt levels, eliminating industrially produced trans fatty acids, decreasing saturated fats, limiting free sugars</td>
<td>Provide accurate and balanced information for consumers in order to enable them to make informed and healthy dietary decisions</td>
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<td>Provide breastfeeding support groups</td>
<td>Train mothers on child health and first aid and encourage regular health visits</td>
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<td></td>
<td>Organize child feeding, nutrition, micronutrient supplementation and salt iodization programmes</td>
<td>Provide incentives for visiting health centre</td>
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<td>Support the integration of child maltreatment prevention strategies into initiatives aimed at reducing adverse childhood experiences and enhancing child development</td>
<td>Strengthen deworming campaigns</td>
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<td>Support immunization programmes</td>
<td>Organize tobacco-free sports activities</td>
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<td>Train mothers on child health and first aid and encourage regular health visits</td>
<td>Designate tobacco-free areas in the community</td>
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<td>Provide improved pre-hospital care and emergency medical services for survivors of violence</td>
<td>Enforce a ban on the sale of tobacco to minors</td>
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<td>Undertake special surveys to understand risks to health of young people and identify and map parts of informal settlements where they are most vulnerable (e.g. where there is free access to harmful substances)</td>
<td>Organize special health programmes for young people (reproductive health, HIV/AIDS prevention, tobacco control and alcohol abuse prevention)</td>
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<tr>
<td>Require effective package warning labels.</td>
<td>Positive role models for inner city young people.</td>
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<td>Enforce a ban on the sale of tobacco to minors.</td>
<td>Alcohol and affordable treatment, including detoxification services, psychosocial support services, and opioid agonist treatment (methadone and buprenorphine) for opioid dependence.</td>
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<td>Empower communities to negotiate a new paradigm of self-enforcement of health regulations.</td>
<td>Education programmes for parents with young children.</td>
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<td>Include tobacco control in primary health care education programmes.</td>
<td>Available and affordable treatment, including detoxification services, psychosocial support services, and opioid agonist treatment (methadone and buprenorphine) for opioid dependence.</td>
</tr>
<tr>
<td>Organize tobacco control committees within the community.</td>
<td>Education and naloxone distribution to prevent opioid overdoses, and overdose prevention protocols.</td>
</tr>
<tr>
<td>Link up with NGOs and advocates to implement the WHO Framework Convention on Tobacco Control provisions at the local level.</td>
<td>Education programmes for parents with young children.</td>
</tr>
<tr>
<td>Strengthen health systems so they can make tobacco cessation advice available as part of primary health care.</td>
<td>Local enforcement supported by community mobilization against illicit drug use.</td>
</tr>
<tr>
<td>Support quitting and other community initiatives in conjunction with easily accessible, low cost pharmacological treatment, where appropriate.</td>
<td>Community action on alcohol for structural policy change.</td>
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<td>Make your city a tobacco-free city.</td>
<td>Local policing targeting street drug markets in at-risk areas (youthful people, homeless).</td>
</tr>
<tr>
<td>Declare all sports activities as tobacco-free.</td>
<td>Restrictions on late trading hours.</td>
</tr>
<tr>
<td>Ban smoking in public places, especially enclosed spaces.</td>
<td>Enforced prohibitions on serving intoxicated patrons on premises.</td>
</tr>
<tr>
<td>Develop citywide drug use prevention and harm reduction programmes.</td>
<td>Random breath testing of drivers.</td>
</tr>
<tr>
<td>Enact and enforce completely smoke-free environments in health-care and educational facilities and in all indoor public places, including workplaces, restaurants and bars.</td>
<td>Local enforcement supported by community mobilization against illicit drug use.</td>
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<tr>
<td>Implement comprehensive bans on any form of direct tobacco advertising, promotion and sponsorship.</td>
<td>Community action on alcohol for structural policy change.</td>
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<td>Deputize citizens to enforce tobacco control ordinances.</td>
<td>Local policing targeting street drug markets in at-risk areas (youthful people, homeless).</td>
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<td>Increase tax rates for tobacco products and ensure that they are adjusted periodically to keep pace with inflation and rise faster than consumer purchasing power.</td>
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<td>Develop local government and metropolitan plans that are consistent with the Framework Convention on Tobacco Control.</td>
<td>Local enforcement supported by community mobilization against illicit drug use.</td>
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<tr>
<td>Work with key community opinion leaders to change perceptions of tobacco's acceptability.</td>
<td>Community action on alcohol for structural policy change.</td>
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<tr>
<td>Pass local ordinances that are stricter than the provisions of the Framework Convention on Tobacco Control, where applicable.</td>
<td>Local policing targeting street drug markets in at-risk areas (youthful people, homeless).</td>
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<td>Tie tobacco control interventions into community development and empowerment initiatives.</td>
<td>Restrictions on late trading hours.</td>
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<td>Develop an urban focus for adaptation of the Framework Convention on Tobacco Control and provide resources and support for local implementation.</td>
<td>Community action on alcohol for structural policy change.</td>
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<tr>
<td>Eliminate illicit trade in tobacco products.</td>
<td>Local policing targeting street drug markets in at-risk areas (youthful people, homeless).</td>
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<td>Address the push-pull factors of rural-urban migration.</td>
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<td>Promote urban planning approaches aimed at preventing crime and violence through environmental design.</td>
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<td>Conduct violence prevention education programmes for the household.</td>
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<td>Include violence prevention in the local school curriculum.</td>
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<td>Organize peace councils and community-provided crime prevention.</td>
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<td>Provide systems for broad dissemination of best practices and encourage local adaptation.</td>
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<td>Provide training to improve reporting of violence prevention achievements to policy-makers.</td>
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<td>Promote investment in and implementation of monitoring of short-, medium- and long-term strategies for the prevention of violence.</td>
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<tr>
<td>Reduce exposure and access to lethal weapons such as firearms.</td>
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<tr>
<td>Conduct sustained campaigns in society at large to promote social norms that emphasize respect, non-violence and gender equity.</td>
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#### Mental Health Promotion

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<tr>
<td>Ensure that safe places are allocated in the communities for recreation and cultural activities as well as for children's play.</td>
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<tr>
<td>Include mental health in the core (e.g. first-degree) training of primary health care workers.</td>
</tr>
<tr>
<td>Make available assessment and treatment protocols for key mental health conditions in primary health care clinics.</td>
</tr>
<tr>
<td>Ensure that primary health care doctors are able to prescribe essential psychotropic medicines and that these are continuously available in the facility or in a nearby pharmacy.</td>
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<td>Ensure that there are sufficient number of primary health care workers to give sufficient time to people with mental health problems.</td>
</tr>
<tr>
<td>Ensure that primary health care workers interact with a mental health professional at least monthly for review of individual cases, coordination of activities and of referral issues, or training and supervision sessions.</td>
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<td>Develop explicit policies on social inclusion.</td>
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<td>Reduce any substantial difference between government-administered and for-profit mental health care facilities on average duration of wait lists, number of minutes of outpatient consultation with a psychiatrist and average number of beds per nurse in psychiatric inpatient facilities.</td>
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<td>Make sure that primary health care doctors are able to prescribe essential psychotropic medicines and that these are continuously available in the facility or in a nearby pharmacy.</td>
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<td>Use community-based and participatory research methods to unmask health inequities in urban settings and develop strategies to respond to inequity in access.</td>
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<tr>
<td>Build capacity to respond to pollution-related illness, injuries, poisoning, substance overdose and alcohol intoxication at the level of the health centre and as part of primary health care in informal settlements.</td>
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<td>Increase investments in primary health care programmes, training and facilities.</td>
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<td>Develop quality improvement projects for health care centres that are located in poorer districts.</td>
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<td>Develop metropoliswide strategies for mental health promotion that involve multiple sectors: housing, health, criminal justice, employment, social welfare, education, the arts, sports.</td>
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<tr>
<td><strong>Health protection in the workplace</strong></td>
</tr>
<tr>
<td>Develop special interventions, training and quality and occupational health programmes to improve working conditions in slums and informal settlements</td>
</tr>
<tr>
<td>Invest in and support provision of first aid kits and training of health workers in small and medium-size enterprises that operate in urban poor communities and informal settlements</td>
</tr>
<tr>
<td>Undertake measures to ensure the provision of safe and healthy working environments, particularly in relation to cottage industries</td>
</tr>
<tr>
<td><strong>Social well-being</strong></td>
</tr>
<tr>
<td>Promote nationwide appreciation of city heritage, art and cultural activities as means of building social capital and promoting positive social values in the urban setting and strengthening national identity</td>
</tr>
<tr>
<td>Conduct research to show the impact of art and culture on mental health protection and resilience and quality of life, especially for the urban poor</td>
</tr>
<tr>
<td>Make explicit an overarching policy on social integration</td>
</tr>
<tr>
<td>Establish linkages with other relevant national social service agencies to obtain financial assistance and social safety nets for migrants, displaced and relocated families and other excluded groups</td>
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<td>Develop, invest in and sustain a policy environment that encourages microfinance and links this to housing, education, livelihood and health initiatives for the urban poor</td>
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## POLICY DOMAIN 3: ECONOMICS

### Incorporate health in urban planning and development

- Emphasize and strengthen the role of urban primary health care
- Strengthen the health equity focus in urban settings
- Put health equity higher on the agenda of local governments
- Pursue a national agenda

### Jobs and income

- Provide training for gainful work and pre-employment seminars to improve chances for getting a job (how to prepare a CV, how to conduct oneself in an interview)
- Provide livelihood training for informal economic activities

- **Jobs and income**
  - Look for ways of integrating livelihood and income-generating projects in community health projects
  - Support community-based pharmacies and drugstores
  - Support community-organized feeding programmes and day care that provide additional income for women
  - Provide opportunities for community fund-raising for health worker benefits and health projects (bazaars, food sales)
  - Encourage healthy marketplace initiatives to improve incomes of vendors and food service workers

- **Jobs and income**
  - Map out areas where unemployment and low incomes are prevalent and develop special measures, e.g. job fairs
  - Develop municipal-level pre-employment training and human resource development programmes to improve chances for employment among the urban poor

- **Jobs and income**
  - Map out areas where unemployment and low income is prevalent and develop special measures to remediate employment inequity
  - Promote and facilitate home gardening for fruit and vegetable production to improve income and nutritional status at household level
  - Develop capacity-building programmes to help cities and municipalities offer pre-employment training and human resource development programmes to improve chances for employment among the urban poor
  - Conduct training of trainers for cities and municipalities to improve employment opportunities for the urban poor

- **Jobs and income**
  - Urban agriculture and urban food systems should be developed to strengthen local economies and enable people to have greater control over the price of food

### Food security and nutrition

- Map out parts of the city where the price and quality of food is inequitable and undertake special measures to reduce the inequity
- Develop and implement nutrition standards for foods served in schools that are consistent with national or regional food-based dietary guidelines
- Promote the implementation of interventions at the workplace that facilitate the adoption of healthy dietary and physical activity habits
- Undertake research and develop policy and action to address the impact of agricultural and trade policy on food security, food equity, health equity, particularly in the urban setting

- **Food security and nutrition**
  - Map out parts of the metropolis where food inequity is prevalent and undertake measures to address this, e.g. farm-to-market roads
  - Promote traditional diets and link food systems to nutrition programmes
  - Provide training of trainers for cities and municipalities to train food vendors and hawkers for food safety and business expansion programmes
  - Promote urban agriculture where applicable
  - Promote local employment via urban food systems
### POLICY DOMAIN 4. GOVERNANCE

**Incorporate health in urban planning and development**

- **Emphasize and strengthen the role of urban primary health care**
  - Put health equity higher on the agenda of local governments
  - Pursue a national agenda

**Land use policy and property rights**

- **Empower communities to negotiate and demand secure tenure and home ownership**
  - Offer the urban poor alternatives to their current shelter location

- **Recognize informal settlers as citizens**
  - Support community action for secure tenure and property rights as part of health programmes

**Land use policy and property rights**

- **Support community action for secure tenure and property rights**
  - Support home ownership and rental accommodation
  - Provide the urban poor with more choice of location and alternatives to their current shelter
  - Make sure that relocation sites and slum upgrading efforts include coordination of services and infrastructure development
  - Ensure that home ownership programmes are linked to microfinance and credit
  - Make slum and community upgrading a priority in urban plans

**Government financing for health**

- **Negotiate for participation in local health policy and planning activities**
  - Negotiate for new sources of funds and test out innovative financing mechanisms for directly supporting community-based health activities of urban poor federations

**Government financing for health**

- **Adopt participatory budgeting for health as a means of ensuring more equitable use of resources for health**
  - Explore new sources of funds and encourage innovative financing mechanisms for directly supporting community-based health activities of urban poor federations
  - Encourage and support community-based health insurance schemes for the urban poor

**Government financing for health**

- **Make health equity a goal of local government plans and metropolitan development schemes**
  - Undertake rationalization of land use policy and land reform to benefit the urban poor
  - Prohibit evictions and demolishing of slums and informal settlements
  - Support community and slum upgrading but also focus on preventing the formation of new slums and informal settlements
  - Provide legal recognition to informal settlements
  - Land use policy should be forward looking, anticipating economic, demographic and technological change and should provide mechanisms for coordination of services and infrastructure development
  - Draw attention to migration trends and peri-urban growth

**Healthy governance**

- **Recognize informal settlers as citizens**
  - Integrate empowerment strategies in all training programmes for health
  - Encourage the community to participate in political activities where determinants of health can be addressed

**Healthy governance**

- **Develop measures to enhance the accountability of the city government for health**
  - Organize health committees, consult with different sectors, use participatory methods for decision-making
  - Involve all sectors in developing a vision for the city and include health as a social goal
  - Provide the public with open access to information about how municipal funds are used for health

**Healthy governance**

- **Affirm non-tolerance for corruption and unresponsive governance**
  - Provide incentives for using participatory budgeting for health at local and metropolitan levels
  - Develop innovative financing mechanisms for supporting the community-based health activities of urban poor federations

**Healthy governance**

- **Make health equity a goal of local government plans and metropolitan development schemes**
  - Conduct research and initiate policy reforms that support innovative financing mechanisms (tobacco taxes, social health insurance) for supporting community-based health activities of urban poor federations
  - Provide incentives for using participatory budgeting for health at local and metropolitan levels
  - Develop innovative financing mechanisms for supporting the community-based health activities of urban poor federations

**Healthy governance**

- **Affirm non-tolerance for corruption and unresponsive governance**
  - Affirm non-tolerance for corruption and unresponsive governance
### ANNEX VIII: EVALUATING POTENTIAL INTERVENTIONS – SAMPLE SCORING TABLE

<table>
<thead>
<tr>
<th>Strategy / action</th>
<th>Reduces health inequities (based on research)</th>
<th>Resources are available</th>
<th>Time frame to implement &amp; see results</th>
<th>Acceptable to communities and other stakeholders</th>
<th>Compatible with current priorities and policies</th>
<th>Cost-effective?</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include violence prevention in the local school curriculum</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>Short ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>14</td>
</tr>
<tr>
<td>Ensure that walking, cycling and other forms of physical activity are accessible to and safe for all</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>Long ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>12</td>
</tr>
<tr>
<td>Promote urban planning approaches aimed at preventing crime and violence through environmental design</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>Long ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>11</td>
</tr>
<tr>
<td>Organize campaigns for road safety</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>Medium ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>13</td>
</tr>
</tbody>
</table>

### ANNEX IX: GLOSSARY

**Census tracts** are geographical regions defined for the purpose of taking a census. Usually these coincide with the limits of cities, towns or other administrative areas. Census tracts represent the smallest territorial unit for which population data are available in many countries.

**Community-based and participatory research** is a collaborative process that equitably involves community members, organizational representatives and researchers in all aspects of the research process, in which all partners contribute expertise and share decision-making and responsibilities.


**Community financing** actively involves the community (extended families, local organizations, ethnic and religious groups) in revenue collection, pooling, resource allocation and, frequently, service provision.


**Cost-effectiveness analysis** compares the costs and health effects of specific interventions in order to evaluate which interventions provide the greatest value for money, maximizing the health outcomes for the available resources.


**Equity** is an ethical concept of social justice or fairness. It comprises two elements: horizontal equity, which is the equal treatment of equals; and vertical equity, which is the unequal but fair treatment of unequals.


**Equity-focused health impact assessment** uses health impact assessment methodology to determine the potential differential and distributional impacts of a policy, programme or project on the health of the population, and on specific groups within that population, and assesses whether the differential impacts are equitable.

**Equity in health** (health equity) is the absence of systematic disparities in health between groups with different levels of underlying social advantage or disadvantage.


**Equity yardstick** assesses the performance of a city or urban area based on equity considerations by plotting the range or the difference in status between two extreme groups of population or geographical areas within its jurisdiction. This provides a gauge of how effectively the city or urban area has responded to inequity factors within a specific policy domain or programme.

**Focus group discussion** is a form of qualitative research. It involves group interviewing and capitalizes on communication between
research participants in order to generate data, rather than the researcher asking questions and directing the interview, allowing interviewee participants to be in a more natural setting than in a one-to-one interview.


Food systems are all activities related to the production, distribution and consumption of food that affect human nutrition and health, embedded in environments that differ according to a variety of factors, such as agro-ecology, climate, social aspects, economics, health and policy.


Framework Convention on Tobacco Control is an evidence-based treaty that reaffirms the right of all people to the highest standard of health by addressing reduction strategies and supply issues on the globalization of the tobacco epidemic.


Health determinants are combined factors that affect the health of individuals and communities, for example the social and economic environment (socioeconomic status, education level), the physical environment (access to safe water, clean air, healthy workspace, health facilities) and the person’s individual characteristics and behaviours (gender, age, genetics, early life habits and behaviours).


Health differentials are measurable differences, variations or disparities in the health of individuals or groups.

Health equity is measurable in health.

Health impact assessment is a combination of procedures, methods and tools by which a policy, programme or project may be assessed and judged for its potential, and often unanticipated, effects on the health of the population, and the distribution of those effects within the population.

Health literacy is an individual’s cognitive and social ability to gain access to, understand and use health information for promoting and maintaining a good health status.


Health opportunities are opportunities for persons to achieve good health – free from escappable illness, avoidable affictions and premature mortality – that are determined by social factors rather than through personal decision.


Healthy Cities is a programme that engages local governments in health development through a process of political commitment, institutional change, capacity building, partnership-based planning and innovative projects. It promotes comprehensive and systematic policy and planning with a special emphasis on health inequalities and urban poverty, the needs of vulnerable groups, participatory governance and the social, economic and environmental determinants of health. It also strives to include health systematic policy and planning with a special emphasis on health inequalities and urban poverty, the needs of vulnerable groups, institutional change, capacity building, partnership-based planning and innovative projects. It promotes comprehensive and systematic policy and planning with a special emphasis on health inequalities and urban poverty, the needs of vulnerable groups, participatory governance and the social, economic and environmental determinants of health. It also strives to include health system.


Healthy urbanization is the process of enabling people in urban areas to gain greater control over their health and its determinants through good urban governance that creates equal opportunities for health for all.


Impact assessment is a process whereby predictions are made about the future consequences or impacts of changes being made or considered.

Integrated Management of Childhood Illnesses (IMCI) refers to a broad WHO/UNICEF initiative that was launched globally in 1995 with the objective of reducing under-five mortality, morbidity and disability, and improving child growth and development. Its aim was to move from the vertical disease-specific approach of traditional programmes to a more integrated and horizontal child-centred approach, in line with the philosophy of primary health care.


Inter-city health inequality is an inequality in health outcomes that derives from differentials in access and determinants across two or more cities.

Intercountry action for health is an action undertaken by sectors outside the health sector, possibly but not necessarily in collaboration with the health sector, on health or health equity outcomes or on the determinants of health or health equity. WHO/PHAC (World Health Organization and Public Health Agency of Canada). Health equity through intersectoral action: an analysis of 16 country case studies. Geneva, World Health Organization, 2008.

Intra-city health inequality is an inequality in health outcomes that derives from differentials in access and determinants across wards/districts or socioeconomic groups within a city.

Microfinance is the provision of financial services to low-income clients, including the self-employed. Financial services generally include savings and credit; however, some microfinance organizations also provide insurance and payment services. Microfinance has evolved as an economic development approach to benefit low-income women and men.


Normative international or national standards are goals with various indicators set by governments or international agencies as benchmarks to measure progress and achievements. Examples of normative standards include the MDGs (international) and the Healthy People 2010 goals of the United States (national). The health statuses of United States cities are evaluated and compared to the 2010 goal in the following reference.


Obesity is commonly defined as a body mass index (BMI) of 30 kg/m² or higher. BMI, also known as Quetelet’s index, is a measure of adiposity that takes the body weight (in kg) divided by the square of the height of an individual (m²) to represent the relative fatness of an individual’s body.

Overweight is defined as a BMI of 25–30 kg/m².


Gallagher D. How useful is body mass index for comparison of body fatness across age, sex, and ethnic groups? American Journal of Epidemiology, 1996, 143(3):228–239.

Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-determination. There are four essential components of primary health care: universal coverage, people-centred care, inclusive leadership, and health in all policies.


Risk factors are social, physical, environmental and other factors that raise the probability of an adverse health outcome, for example smoking, obesity or lack of exercise.

Secure tenure is the right of all individuals and groups to effective protection by the State against unlawful evictions.


Slum upgrading consists of physical, social, economic, organizational and environmental improvements of existing slums, undertaken cooperatively and locally among citizens, community groups, businesses and local authorities.

*Cities without slums: action plan for moving slum upgrading to scale*. Washington, DC, Cities Alliance, 1999.

Social exclusion is a multidimensional process caused by direct and indirect discriminatory actions or policies, creating unequal power relations in a society and multiple disadvantages for a group or population.


Social stratification is a form of social inequality in which categories of people in a society are ranked in a hierarchy (for example caste system, class system). Groups at higher levels of the stratification have access to more resources than groups lower in the stratification.


Stakeholders are individuals and organizations that have an interest in or are actively involved in a specific project.

Terms of reference describe the purpose and structure of a project, committee, meeting, negotiation or other activity. A terms of reference document is created during the early stages of project development. Once the terms of reference have been approved, the members of the project team have a clear definition of the scope of the project. They will then be ready to progress with the creation of the remaining project deliverables.

Urban food systems are the principles of food systems applied within the urban context. See also food systems.

Urban health refers to the determinants of health and disease in urban areas, with the urban context itself as the exposure of interest.


Urban health equity is the principle of health equity applied within urban areas. See also equity in health.

Urbanization is the process by which an increasing proportion of an entire population lives in cities and other urban areas. The definition of “urban” is based on different criteria according to each country.


Vulnerable and disadvantaged groups or populations are individuals or groups who experience adverse impacts more severely than others, due to their race or ethnicity, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other characteristic. Other factors of relevance include gender, culture, sickness, physical or mental disability, poverty or economic disadvantage, and dependence on unique natural resources.