ANNEXES

A. RESOURCES AND TOOLS
B. METHODOLOGICAL APPROACH
C. EXAMPLES OF INTERVENTIONS
ANNEX A
ADDITIONAL RESOURCES AND TOOLS

RESOURCES AND TOOLS FROM THE UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME (UN-HABITAT)

URBAN INDICATORS
http://ww2.unhabitat.org/programmes/guo/urban_indicators.asp
The website is a portal to UN-HABITAT’s urban indicators, which are collected regularly in a sample of cities worldwide to report on progress on the 20 key areas of the Habitat Agenda at the city level.

URBANINFO
http://www.devinfo.info/urbaninfo/
The website provides access to a web-based version of UrbanInfo.

RESOURCES AND TOOLS FROM THE WORLD HEALTH ORGANIZATION (WHO)

KNOWLEDGE NETWORK ON URBAN SETTINGS
http://www.who.or.jp/knus.html
The Knowledge Network on Urban Settings was focused on synthesizing global knowledge on social determinants of health and urbanization. The website provides access to the Network’s final report, as well as a range of other resources that informed its work.

COMMISSION ON SOCIAL DETERMINANTS OF HEALTH
The Commission on Social Determinants of Health was a global network of policy-makers, researchers and civil society organizations brought together by WHO to give support in tackling the social causes of poor health and health inequities. The website provides access to the Commission’s final report and related information.

HEALTHY CITIES PROGRAMME
http://www.euro.who.int/healthy-cities
The website provides a wealth of information on all aspects of urban health, and describes WHO’s Healthy Cities Programme and its activities around the world.

URBAN HEALTH EQUITY ASSESSMENT AND RESPONSE TOOL (URBAN HEART)
http://www.who.or.jp/urbanheart.html
The website provides access to the latest version of Urban HEART, as well as supporting materials and information.
OTHER RESOURCES AND TOOLS

WORLD BANK – URBAN HEALTH
http://go.worldbank.org/3YB10HELN0
The website provides links to resources that will help planners design, implement and improve urban interventions for better health outcomes.

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID) – URBAN HEALTH AND ENVIRONMENT
http://www.makingcitieswork.org/urbanThemes/Urbanhealthandenv
The website describes USAID’s work in the area of urban health and provides links to selected full-text versions of USAID-sponsored publications on urban health.

UNITED STATES CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) – TOOLS FOR COMMUNITY ACTION
http://www.cdc.gov/healthycommunitiesprogram/tools/index.htm
The website, part of CDC’s Healthy Communities Program, provides a range of tools for engaging communities to improve places and organizations that touch people’s lives every day – schools, workplaces, healthcare sites and other community settings – for health promotion and chronic disease prevention.

INTERNATIONAL SOCIETY FOR URBAN HEALTH
http://www.isuh.org
The International Society for Urban Health is an association of researchers, scholars and professionals from various disciplines and areas of the world who study the health effects of urban environments and urbanization.

INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT – URBAN ENVIRONMENT
http://www.iied.org/human-settlements/key-issues/urban-environment-0
The Human Settlements Programme of the International Institute for Environment and Development has been working on urban environmental issues since the mid-1970s.

AFRICAN POPULATION AND HEALTH RESEARCH CENTER
http://www.aphrc.org/
The Center’s mission is to promote the well-being of Africans through policy-relevant research on population and health. A major focus of its work has been on urban health.

URBAN HEALTH TODAY: A CURRENT-AWARENESS TOOL
http://urbanhealthtoday.blogspot.com/
The website collects reports from the grey literature – not indexed in medical research storage sites (such as PubMed) – surrounding the health of people in cities worldwide. Users can access reports and upload information to share with others.
Analyses completed by the World Health Organization for this report were based on data from reliable sources (established international organizations, or national or municipal government agencies) for which disaggregation was possible by urban/rural setting, and ideally by other socio-economic factors such as income level. Urban samples were disaggregated and health inequities were assessed by looking at how different subgroups varied across a range of health indicators.

Data from the World Health Survey and the Demographic and Health Surveys were used for many of the topic areas. The World Health Survey was implemented by the World Health Organization and used a standardized survey instrument to compile comprehensive baseline information on health and health-care expenditure. In 2002, 71 countries implemented various forms of the World Health Survey – including several high-income countries, mostly in Europe, which completed a truncated version of the survey. Data were collected via face-to-face surveys, computer-assisted telephone interviews or computer-assisted personal interviews. Sample sizes varied from 1000 to 10 000, and included only randomly selected adults. The Demographic and Health Surveys are ongoing nationally representative surveys that are reliable, valid and internationally comparable. They are funded by USAID and conducted collaboratively by ICF Macro and national authorities.

A methodology proposed by Wagstaff, van Doorslaer and Watanabe was used to decompose urban health inequalities of child malnutrition and skilled birth attendance coverage (Chapter 4).

The method determines the individual contribution of each factor to health inequality, after controlling for all other factors. In addition, it is possible to identify whether the contribution is caused by the magnitude of the effect of each factor on the health variable or by the degree of income-related inequality in the factor itself, or by a combination of both.

Existing trends were used to project the future achievement of select health-related MDGs and targets in urban areas by 2015 (Chapter 5). Consistent with the overall methodological approach, this analysis went beyond urban averages to reveal how the richest and poorest city dwellers differ from one another. Projections were based on observed rate of progress over the longest time period for which data were available. This form of linear projection might not be most accurate in every case, given that each country has a specific context and may be undergoing health reforms or economic growth (or crisis), which may create the conditions for better or worse performance leading to 2015. However, linear projection also has several advantages: it can be applied in a standard manner for all countries; it is dependent entirely on observable data, as opposed to arbitrarily assigned growth rates; and it is relatively simple to understand.

Although sample sizes from cities were sufficient for these analyses, it is likely that slums or informal settlements were not surveyed comprehensively. It is therefore possible that results for poorer populations are an underestimate of the true magnitude of health inequities.
### TABLE B.1
COUNTRIES FOR WHICH DATA WERE AVAILABLE FROM THE DEMOGRAPHIC AND HEALTH SURVEYS FOR FOUR KEY INDICATORS (X INDICATES AVAILABILITY OF DATA)

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<tr>
<th>REGION</th>
<th>COUNTRIES</th>
<th>SKILLED BIRTH ATTENDANCE</th>
<th>STUNTING</th>
<th>UNDER-FIVE MORTALITY</th>
<th>ACCESS TO PIPED WATER</th>
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**AFRICA TOTAL** 26 26 25 27
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<td>GLOBAL TOTAL</td>
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The following examples are not an exhaustive review of all possible interventions to reduce urban health inequities, but are illustrative of the kind of action that can be taken for selected health determinants. Annex A provides additional sources of information that can be consulted to help choose priority interventions.

Natural and built environment interventions

Within the domain of the natural and built environment, possible areas for action are mitigating and adapting to climate change; improving housing conditions; enhancing access to safe water and improved sanitation; improving transport systems and infrastructure; and improving air quality.
MITIGATE AND ADAPT TO CLIMATE CHANGE AND ITS IMPACTS

Urban settings have traditionally been significant contributors to climate change because of their use of energy, resources and land. Strategies for responding to climate change are generally classified as mitigation, which involves taking action to reduce the sources of greenhouse gases or enhance their removal; and adaptation, which refers to the adjustment in natural or human systems in response to actual or expected climate change or its effects. Mitigation and adaptation are not mutually exclusive, and neither is sufficient in itself: focusing only on mitigation would leave cities ill-prepared for anticipated health-related impacts; while focusing only on adaptation would not address cities’ longer-term contributions to greenhouse gas emissions.

DEVELOP HEALTH-PROMOTING MITIGATION POLICIES. Carbon-cutting policies can reduce greenhouse gas emissions and bring additional benefits for the environment and for health, for example through reduced outdoor air pollution leading to better cardiovascular and respiratory health. Further, dealing simultaneously with air pollution and climate change issues is an opportunity to take advantage of synergies and make better use of limited resources.

ASSESS CLIMATE CHANGE VULNERABILITY, IMPACTS AND ADAPTATION. Assessments for climate adaptation can help local governments identify needs, areas for improvement and opportunities for proactive action in the light of projected climate impacts. Developing cities’ resilience is essential, from investment in structural disaster mitigation to regulations, building codes, urban management and public health strengthening. Adaptation to climate change can be strengthened through public health action on the availability and quality of drinking water, sanitation systems, food security and safety, and the built environment.

STRENGTHEN HEALTH SYSTEMS. To enable appropriate responses to additional or new climate-sensitive health impacts, current public health practice can be reviewed and strengthened, and new components specific to climate change can be fostered within the public health infrastructure. Intervention areas include public education, vector-borne disease surveillance, vector management, disaster preparedness, flood and disaster risk maps, identification of populations at risk, laboratories, diagnosis and reporting systems, and facilitation of access to health care for vulnerable population subgroups.

Additional ways in which cities can prepare themselves are considered in the section on “Services and health emergency management.”

IMPROVE HOUSING CONDITIONS

Several interventions can help improve urban housing conditions for those living in unsafe or unhealthy dwellings. Interventions include improving the physical condition of housing, enhancing housing accessibility for people with disabilities, increasing affordability of housing, addressing overcrowding and promoting housing rights.

IMPROVE THE PHYSICAL CONDITION OF HOUSING. Interventions that address structural aspects of housing – for example, the quality of heating and ventilation systems – have been shown to dramatically improve health outcomes. Renovations and repairs to poor-quality housing reduce illness and death in both children and adults. In New Zealand, for example, insulating older houses led to improved self-rated health, fewer visits to a general practitioner, fewer days absent from work and fewer days absent from school.

ENHANCE HOUSING ACCESSIBILITY FOR PEOPLE WITH DISABILITIES. In some countries and municipalities, laws require certain new housing to be accessible and usable by people with disabilities. In addition, urban residents are becoming more interested in accessible or universal design. Accessible housing can simplify life for many people, not only those with disabilities.

INCREASE AFFORDABILITY OF HOUSING. Affordable housing improves health outcomes by freeing up family resources for other necessities, such as
food. By providing families with greater residential stability, affordable housing also reduces stress and related adverse health outcomes. Local governments can promote affordable housing through action such as making publicly owned land available for construction of new homes.172,173

ADDRESS OVERCROWDING. Due to the multifaceted nature of approaches to addressing urban housing challenges, there is little evidence to demonstrate the impact of interventions that specifically address overcrowding. Nonetheless, almost all slum-upgrading programmes include interventions to reduce population density and rearrange the use of living space. To make a lasting impact, it is important for programmes to address the underlying causes of overcrowding, such as poverty and exclusion. Intersectoral action that integrates the technical, policy, building, housing, engineering, health and urban planning fields helps ensure a comprehensive approach.

PROMOTE HOUSING RIGHTS. While it is essential to upgrade housing conditions and address affordability and overcrowding, these activities must run parallel with actions that specifically address and focus on the human rights aspects of housing. The right to adequate housing (as a component of the right to an adequate standard of living) is enshrined in many international human rights instruments. A rights-based approach to development in the housing sector can empower the poor and the homeless; promote security of tenure, particularly for women and vulnerable groups in inadequate housing conditions; strengthen protection against forced evictions and discrimination in the housing sector; and promote equal access to housing resources and remedies in cases of violations of housing rights.

ENHANCE ACCESS TO SAFE WATER AND IMPROVED SANITATION

Enhancing access to safe water and improved sanitation involves the integrated implementation of a package of interventions, including mobilizing local governments and communities; developing potable water supplies; implementing water quality management mechanisms; creating grey water drainage systems; developing household sanitation infrastructure; and educating communities on health and hygiene.174

IMPROVE THE QUANTITY AND QUALITY OF WATER AVAILABLE FOR DOMESTIC USE. Making safe water available to households can significantly reduce illness and death from diarrhoeal diseases and waterborne illness.

IMPROVE SANITATION SYSTEMS. Improved sanitation facilities ensure hygienic separation of human excreta from human contact. They protect the water, air, soil and food from contamination and thereby reduce the risk of diseases. Facilities include toilets connected to piped sewer systems or septic tanks, pit latrines with a platform or slab, and composting toilets. When improved sanitation facilities are combined with proper hygiene (hand washing with soap or other agents), their effectiveness is maximized.

INTEGRATE WATER, SANITATION AND RELATED SYSTEMS. Interventions are ideally integrated across water, sanitation, solid waste management and drainage. This is especially important in low-income areas, in order to achieve marked improvement in the local environment and in the lives of poor communities.

IMPROVE TRANSPORT SYSTEMS

The goal of healthy and sustainable transport is to maximize access, personal mobility and healthy physical activity for all city dwellers. Technical components of a healthy and sustainable transport network will vary by locale, local needs and travel patterns. However, the following policy components are considered to be some of the most important:175

START FROM A VISION OF SOCIAL EQUITY. Urban transport systems ideally provide high-quality mobility to all urban residents who need access to jobs, schools and commercial districts, regardless of whether they own a private vehicle. Health risks from pollution and injuries are minimized, and opportunities are enhanced for healthy physical activity and communal interactions across all sectors.
**ENSURE PUBLIC TRANSPORT IS ACCESSIBLE TO PEOPLE WITH DISABILITIES.** Specific measures may include wheelchair lifts or low floor ramps to allow easy access for people with disabilities; priority seating for those who need it; drivers trained to allow passengers time to be seated, and enter and exit the vehicle; and announcement of stops.

**PRIORITIZE NON-POLLUTING TRANSPORT.** Public and non-motorized modes of transport generate fewer health and environmental impacts (for example greenhouse gas emissions) per unit of travel. They can be prioritized in policies using both physical design and economic measures.

**SEPARATE NON-MOTORIZED TRANSPORT NETWORKS.** High-quality pedestrian and cycling networks, separated from vehicular traffic, can help reduce injury risk and enhance the mobility of poor and vulnerable populations, such as children.

**IMPROVE VEHICLE STANDARDS AND TECHNOLOGY.** Policies that support cleaner fuel, improved standards or retrofitting of older vehicle engines, and better vehicle maintenance and monitoring can lower pollution emissions, particularly from the most polluting vehicles.

**USE ECONOMIC TOOLS.** Economic tools such as fuel taxes, congestion charges and parking pricing can be used to discourage highly polluting forms of transport while generating revenues for healthy and sustainable transport.

**OTHER INTERVENTIONS TO IMPROVE ROAD SAFETY.** Evidence from a range of cities shows that improved road safety occurs as a result of a package of measures – including policies and institutions, road environment, the vehicle and the road user – which are implemented consistently and over the long term. Successes have been observed in a wide range of cities.95, 176

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**IMPROVE AIR QUALITY**

As described in Part One of this report, poorer city dwellers tend to be most exposed to urban air pollution and related health risks. For all urban residents, exposure is largely beyond their personal control and requires action by public authorities at national, regional and local levels. The health sector can play a central role in leading a multi-sectoral approach to prevention of exposure to urban air pollution. It can engage and support other relevant sectors (transport, housing, energy production and industry) in the development and implementation of long-term policies to reduce the risks of air pollution to health.

**DESIGN, IMPLEMENT AND ENFORCE AMBIENT AIR QUALITY MANAGEMENT INTERVENTIONS.** Reducing levels of some ambient air pollutants (for example in the form of fine particulate matter) could reduce deaths in polluted cities by 15% every year.177 Interventions include policies and regulations on maximum concentrations of air pollutants, emissions standards for mobile and stationary sources, fuel standards, cleaner energy sources, sustainable transportation and public education campaigns. Vehicle exhaust and industrial emissions are common sources of air pollution, and can be reduced by a combination of regulations and incentives for limiting harmful emissions.

**REDUCE EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE.** Because there is no safe level of exposure to second-hand tobacco smoke, a total smoking ban in workplaces, public places, public transport and, as appropriate, in other public places is the safest public health approach towards this issue. Beijing, China, undertook such action while it hosted the Olympic Games in 2008. Many cities have adopted permanent smoking bans. New York City, United States, is a celebrated example of a smoke-free city; other cities that have introduced indoor smoking bans include Chandigarh, India; Mexico City, Mexico; Davao, Philippines; Mecca and Medina, Saudi Arabia; Dubai, United Arab Emirates; and Liverpool, United Kingdom. Other cities have been successful in implementing smoke-free environments by enforcing existing provincial or national regulations, as is the case in Recife, Brazil.178

Smoke-free policies have an impact beyond the cities adopting them. In several cases, neighbouring cities were encouraged and implemented similar measures, while in other cases the regulations became regional and even national; for instance, Makati in the Philippines implemented an anti-smoking ordinance in early 2003, and their experi-
The experiences of New York City, United States, and Hong Kong SAR, China, also show the potential for implementing other tobacco control interventions, including tax increases, anti-tobacco advertising and cessation services.

ADDRESS INDOOR AIR QUALITY. The quality of indoor air depends both on the quality of outdoor air and on the strength of emissions of indoor sources. Measures to reduce indoor air pollution and associated health effects include switching to cleaner alternatives such as gas, electricity or solar energy; installing improved stoves or hoods that vent health-damaging pollutants to the outside; and encouraging behavioural change.

Social and economic environment interventions

Interventions related to improving the social and economic environment in urban settings include improving safety and security, and promoting gender equality in all policies and at all levels.

IMPROVE SAFETY AND SECURITY

As shown in Part Two of this report, urban crime and violence are disproportionately distributed in cities. Often, it is the poorest neighbourhoods that suffer most. Numerous strategies exist for improving safety and security in cities; UN-HABITAT has classified interventions for reducing urban crime and violence into six broad approaches, as follows:

1. ENHANCE URBAN SAFETY AND SECURITY THROUGH EFFECTIVE URBAN PLANNING, DESIGN AND GOVERNANCE. This group of interventions involves manipulating and maintaining the physical environment, which is the setting within which most crimes take place.

2. PROMOTE COMMUNITY-BASED APPROACHES TO ENHANCING URBAN SAFETY AND SECURITY. Interventions of this nature enable communities to take ownership of initiatives. Community groups often become either the source of project ideas or play leading roles in implementing them.

3. STRENGTHEN FORMAL CRIMINAL JUSTICE SYSTEMS AND POLICING. This is the classical approach to enhancing safety and security, in that this group of interventions is the primary territory of the police and criminal justice system.
**REDUCE RISK FACTORS.** These interventions tend to focus on groups that are likely to be perpetrators of crime or on groups that are at risk of being victims of crime. The aim is either to reduce the likelihood of such groups getting involved in criminal activities or to reduce the problems faced by victims.

**PROMOTE NON-VIOLENT RESOLUTION OF CONFLICTS.** These interventions seek to manage situations in which conflicts often arise in order to reduce the likelihood of this happening or to find solutions to the problems that do not result in violence.

**STRENGTHEN SOCIAL CAPITAL.** This group of interventions involves improving the ability of people, groups and communities as a whole to challenge the problems of crime and violence and the provision of community facilities that facilitate or provide more opportunities for processes of this nature.

Increasingly, it is being recognized that these interventions aimed at reducing urban crime and violence need to be part of an integrated and comprehensive programme. It is now common to find programmes containing elements of many different intervention areas listed above.

**PROMOTE GENDER EQUALITY**

Women face particular challenges in achieving urban health equity. Interventions to promote gender equity in cities include the following:

**GENDER MAINSTREAMING,** which aims to address gender explicitly in all urban policies through a systems approach that integrates gender analysis as part of the development of city health profiles and city health development plans.

**ADDRESS GENDER BIASES** in the structures of society, in laws and their enforcement, in the way organizations are run and interventions designed, and in the way in which cities’ economic performance is measured.

**DEVELOP AND FINANCE POLICIES AND PROGRAMMES** that support the economic participation of women.

**PROMOTE THE EDUCATION OF GIRLS AND WOMEN,** so that their ability to challenge gender inequality individually and collectively is strengthened.

**INCREASE WOMEN’S PARTICIPATION** in political and other decision-making processes from household to municipal level.

### Food security and quality interventions

Several evidence-based interventions can promote food security and quality in cities, especially among disadvantaged populations. They include promoting in-city food production; ensuring schools support healthy food choices; providing older adults with healthy food as part of home-delivered meal services; and regulating food production and marketing. The main features of each intervention are presented below.

**PROMOTE IN-CITY FOOD PRODUCTION.** Many cities have promoted food production within their geographical limits using community gardens, backyards, urban farms, vacant lots, schools and other public land. The benefits extend beyond food production and include nutritional education and increased opportunities for physical activity.

**ENSURE SCHOOLS SUPPORT HEALTHY FOOD CHOICES.** Programmes that make healthy food options available through school food services, including cafeterias and vending machines, have been shown to be effective. Other effective school-based strategies include teaching students about dietary issues and involving parents in this education.

**PROVIDE OLDER ADULTS WITH HEALTHY FOOD AS PART OF HOME-DELIVERED MEAL SERVICES.** Home-based interventions, in which older adults have increased access to fruit and vegetables using existing infrastructure, are effective in improving diets.

**REGULATE FOOD PRODUCTION AND MARKETING.** Regulations on food production and marketing...
have proven effective in protecting the public from exposure to potential hazardous products or practices. In 2008, New York City, United States, began restricting artificial trans fats in restaurant food preparation. Preliminary results suggest that replacement of artificial trans fats has resulted in food products with more healthful fatty acid profiles.\(^{189}\)

### Services and health emergency management interventions

Primary health-care reforms\(^{4}\) lie at the heart of improving health services in cities, and are described below.

#### UNIVERSAL COVERAGE REFORMS

Universal coverage reforms help ensure that health systems contribute to health equity, social justice and the end of exclusion, primarily by moving towards universal access and social health protection.

All city dwellers must have access to health care according to need and regardless of ability to pay. WHO recommends financial pooling and prepayment as financing mechanisms for providing this type of social health protection.\(^{190}\) These schemes are based on payments made in advance of an illness, held in a pool that can be used to fund health services for the sick.

Universal access in cities can be facilitated by the establishment of networks of primary care centres. They provide an alternative to unregulated commercialized care, and offer a place to go to without paying burdensome fees.

#### SERVICE DELIVERY REFORMS

Service delivery reforms reorganize health services to better respond to people’s needs, so as to make them more socially relevant and more responsive to the changing world while producing better outcomes. The perspectives and choices of patients, families and communities are sought, heard and respected. Their knowledge, values, beliefs and cultural backgrounds are incorporated into the planning and delivery of care.
Integrated and coordinated care – across health workers, clinical settings and time – is another aspect of service delivery reform. This implies that city dwellers have regular entry points for accessing care, in the form of primary care clinics located in their communities. It also implies that primary care workers have defined clinical populations for which they plan and coordinate care over time. The identified primary care worker (or team) can serve as the overseer and director of care, ensuring that efforts of all involved health workers are integrated and coordinated.

Formal linkages with communities result in more people-centred and effective services. Community health workers can be trained and deployed relatively quickly, understand the community’s health needs, and give underserved communities access to services.

**PUBLIC POLICY REFORMS**

A “health in all policies” approach needs to be integrated broadly throughout local government. Specific strategies for doing so have been discussed in Chapter 6 of this report.

**LEADERSHIP REFORMS**

Many leadership challenges and skills discussed in Chapter 6 pertain equally well to leadership for primary health-care renewal. In cities, leadership is especially important to manage the complex political environment in which many health-care actors prevail, each with their own values, interests and scope of influence.

The national ministry of health usually plays a pivotal role in urban health services. As such, it is essential that local leaders engage ministry officials in regular policy dialogue on primary care renewal in their cities. Where possible, local leaders can also provide an urban dimension to national health planning processes.

**HEALTH EMERGENCY MANAGEMENT**

Cities have crucial roles to play in preparing for health emergencies and climate-related health impacts. Effective urban policies and plans involve multiple sectors – including the health sector – and complement regional and national polices and plans.
STRENGTHEN THE RESILIENCE OF COMMUNITIES. Improving the ability of communities to protect themselves from all types of hazards, and involving the health sector in prevention and community-led local planning and training, will help to reduce risks and provide a more effective emergency response.

DEVELOP, DISSEMINATE AND REGULARLY TEST HEALTH EMERGENCY RESPONSE AND RECOVERY PLANS. Detailed emergency management plans include an early warning system that communicates to the health sector and to the community; a system for coordinating city health emergency response operations, such as an incident management system, standard operating procedures and a roster of trained human resources to provide surge capacity; and a business continuity plan for the health system to ensure that critical health services are provided in an emergency.

DEVELOP ALL-HAZARD HEALTH EMERGENCY MANAGEMENT SYSTEMS. These systems execute the emergency response and recovery plans. They have the capacity to provide safe and secure health services, food and water, sanitation, protection and shelter across a wide range of situations. As such, they help minimize loss of life in emergencies, disasters and other crises.

STRENGTHEN SERVICE PREPAREDNESS FOR CLIMATE CHANGE. A strong infrastructure for delivering health-care services must be part of the public health response. Health workers can be trained to recognize and manage emerging health threats associated with climate change, such as malaria and other vector-borne diseases. Other aspects of everyday health services might also need to be improved, including disease surveillance, identification of at-risk populations, laboratory capacity, diagnostic and reporting systems, and facilitation of access to health care for vulnerable populations.
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