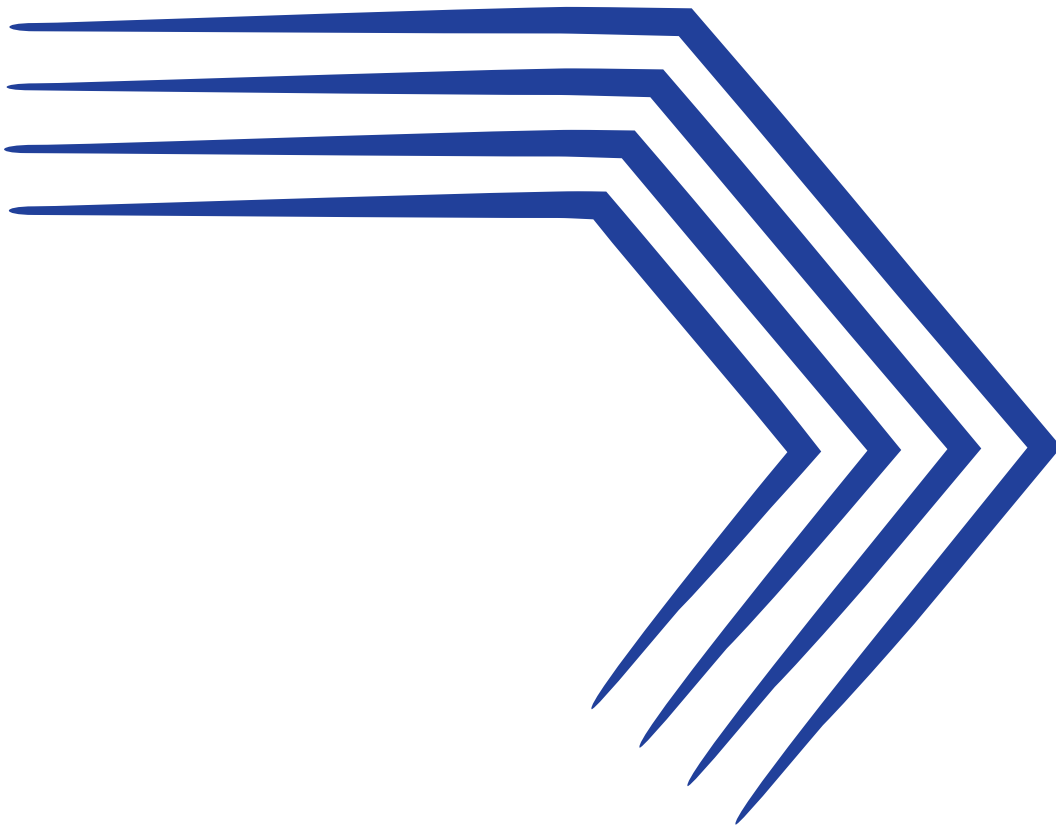


Compendium of WHO and other UN guidance on health and environment



Chapter 11. Priority settings for action



WHO/HEP/ECH/EHD/21.02

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Suggested citation. Priority settings for action. In: Compendium of WHO and other UN guidance on health and environment. Geneva: World Health Organization; 2021 (WHO/HEP/ECH/EHD/21.02)

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11.1 Cities and other urban settlements



Cities and other urban settlements can bring many opportunities for better health, a cleaner environment and climate action. Strong urban policies must match those goals since health is essential for fostering good urban livelihoods, building a productive workforce, creating resilient and vibrant communities, enabling physical mobility, promoting social interaction and protecting vulnerable populations.
























This section addresses the main principles and areas for actions to better integrate health in the built environment and spatial planning decisions in cities. The agenda for mutual and cross-cutting support between the built environment, planning and health is very long. It encompasses multiple levels (e.g. local, regional), numerous stakeholders and many sectors (e.g. transport, housing, land-use).














Cities and other urban settlements should also make use of the opportunity presented by having a single authority under a city mayor who is empowered to take cross-sectoral decisions, for example on urban planning, transportation systems, purchasing, supply of energy, water and sanitation and waste management. Strategic urban planning will be the key to creating supportive and enabling environments for health, making sure that health and equity considerations are integrated throughout the planning process, investment period, and policy decisions made at the local level.



Overview

Urbanization is one of the leading global trends of the 21st century that has a significant impact on health. Over 55% of the world's population live in urban areas, a proportion that is expected to increase to 68% by 2050 (1). As most future urban growth will take place in developing cities, this provides policy-makers with a unique opportunity to guide urbanization and other major urban development trends in a way that protects and promotes health.

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
Policies and actions			
1. Create economically and socially viable local communities with accessible local amenities. This includes citywide access to safer walking, biking, nature, public spaces with public transport supporting mobility, recreation, access to services and social interactions, which reduces the use of energy and resources (2-4).	 Land use planning	Community; national	Infrastructure, technology or built environment
2. Create variety in spatial planning, such as in land parcel size, forms of land tenure and size of housing to facilitate more socially inclusive (public) places and (green) spaces (2, 4).	 Land use planning	Community; national	Infrastructure, technology or built environment
3. Plan places that are more resilient to climate change and natural disasters: create well-designed and accessible green and blue spaces which also act as buffer zones and functional landscapes (2).	 Land use planning	Community; national	Infrastructure, technology or built environment
4. Design human settlements which are less demanding on resources: protect and restore urban ecosystems, use nature-based solutions, innovative solutions and good practices of production, consumption, waste reduction and disposal to promote health, protect the environment and improve resilience to climate change (2, 4).	 Land use planning  Industry  Environment  Other sectors	Community; national	Infrastructure, technology or built environment; other management and control
5. Implement interventions in polluting sectors, such as in transport and industries, and promote cleaner indoor air through access to cleaner fuels and technologies for cooking, heating and lighting (3); see also Chapter 2 Air pollution .	 Transport  Industry  Energy  Other sectors	Community; national	Other management and control
6. Provide well-managed WASH facilities, adequate waste disposal and housing and access to healthy food (see relevant sections in this compendium) (4).	 Water/sanitation  Waste  Housing  Food	Community; national	Infrastructure, technology or built environment
7. Strengthen institutions for integrated urban and territorial planning: increase capacity for integration and participation, and inform and integrate decision-making processes for urban policies with other relevant sectorial policies and interventions, including through the HiAP framework (2, 4, 5).	 Land use planning  Health	Community; national	Governance
8. Perform health and economic impact assessments for urban policies, including health equity assessments, linking to social and environmental impact assessments; involve communities in the assessment of impacts of local interest (2, 4).	 Land use planning  Health	Community; national Universal health coverage	Assessment and surveillance

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>9. Allocate resources across sectors to account for the expected health impacts of sector-based policies. Use fiscal and financial mechanisms to influence the urban determinants of health, through investments in health-enhancing policies as well as taxation of unhealthy products and practices (2, 4).</p>	 Finance  Health  Environment	Community; national	Taxes and subsidies
<p>10. Monitor and track risks to health and well-being of different population groups; monitor the adoption of policies and investments that address these health risks; and assess cities' health performance using timely data and targeted indicators (2, 4).</p>	 Health  Environment	Community; national Universal health coverage	Assessment and surveillance
<p>11. Develop the necessary capacity, skills, SOPs, training procedures and job functions for the public health system to integrate health into urban development and deliver on the New Urban Agenda (2, 4).</p>	 Health  Land use planning	National; community Universal health coverage	Information, education and communication
<p>12. Develop a common vision for social cohesion and health equity by adopting a person-centred “right to health” framework that includes the right to access, use and sustainably transform urban environments (2, 4, 6).</p>	 Health  Land use planning	National; community Universal health coverage	Other management and control

Selected tools

UN-Habitat/WHO 2020: *Integrating health in urban and territorial planning: a sourcebook for urban leaders, health and planning professionals* (2)

One of the main challenges today is to ensure that urban and regional leaders have the knowledge and guidance to integrate health and well-being into their planning processes. This guidance document Integrates health in urban and territorial planning, a sourcebook designed as a tool to assist national governments, local authorities, planning professionals, health professionals and civil society organizations on how to improve planning frameworks and practice through the incorporation of health considerations, at all levels of governance and across the spatial-planning continuum. The sourcebook explains why health needs to be a part of urban and territorial planning and how to make it happen, offering a comprehensive variety of resources, including frameworks, entry points, guidance and tools, as well as specific case studies illustrating recommended approaches to bring together planning and public health.

WHO 2020: Urban Health Initiative model process (7)

The Urban Health Initiative model process and its step-wise approach can help urban leaders to create demand for action for healthier and more climate-friendly cities by making the best use of local data, knowledge, competencies and processes to include health in the development equation. The model process comprises six levels of urban transformation: i) mapping the current situation, policies and decision-making processes; ii) adapting and applying health and economic tools in the local context; iii) developing and testing scenarios; iv) building capacity to engage effectively; v) communication and outreach to sustain and mobilize support; and vi) monitoring results and refining policy.

UN-Habitat: Global Land Tool Network (8)

The Global Land Tool Network is an alliance of international partners committed to increasing access to land and tenure security for all, with a particular focus on the poor and women. It uses a rights-based approach. The network's partners include international civil society organizations, research and training institutions, bilateral and multilateral organizations and international professional bodies. The network provides a suite of land rights-based tools covering a range of subject areas.

Selected tools

WHO Regional Office for Europe 2017: *Urban green spaces: a brief for action* (9)

This briefing presents the key findings of a review of research evidence and practical case studies on urban green space interventions and provides implications for practice. It covers urban green spaces and their benefits, and planning and design involving the community and stakeholders, while promoting monitoring and evaluation. It also describes potential risks and challenges to be considered and avoided with a set of key messages and further reading.

FAO 2020: *City region food systems programme* (10)

A suite of online guidance, tools and information that offers concrete policy and programme opportunities through which rural and urban areas and communities in a given city-region can be directly linked. Directly addresses the wider determinants of health and sustainability through a territorial approach. The programme supports assessment and improvement of city-region food systems to help achieve better economic, social and environmental conditions in both urban and nearby rural areas.

WHO 2015: *Measuring the age-friendliness of cities: a guide to using core indicators* (11)

The tool is based on the perspectives and inputs of older people, caregivers and service providers collected from 33 cities across all six WHO regions: African, Americas, Eastern Mediterranean, European, South-East Asia and Western Pacific. The publication focuses on eight key domains of urban life that encompass determinants of health and well-being: outdoor spaces and buildings; transportation; housing; respect and social inclusion; civic participation and employment; social participation; community and health services; and communication and information.

UNICEF 2018: *Shaping urbanization for children. A handbook on child-responsive urban planning* (12)

This handbook on child-responsive urban planning provides details for creating thriving and equitable cities where children live in healthy, safe, inclusive, green and prosperous communities. By focusing on children, this publication provides guidance on the central role that urban planning should play in achieving the SDGs. It is applicable for global perspectives and local contexts for all cities. It provides a highly accessible presentation of concepts, evidence and technical strategies to bring children to the foreground of urban planning.

UN-Habitat 2001: *Tools to support participatory urban decision making* (13)

This toolkit is a contribution to the Global Campaign on Urban Governance, an initiative led by UN-Habitat in collaboration with a whole range of partners whose development goal is to contribute to the eradication of poverty through improved urban governance. This toolkit will contribute to the wider dialogue, advocacy and capacity-building efforts towards improved urban governance.

11.2 Housing



Improved housing conditions can save lives, prevent disease, increase quality of life, reduce poverty and help mitigate climate change. Housing is becoming increasingly important to health in light of urban growth, ageing populations and climate change.














This section addresses the main principles and areas for action to improve housing conditions and provide healthy and sustainable housing for all. Multiple co-benefits for health, the environment and social equality arise from addressing the key health risks associated with housing. For example, installing adequate thermal insulation and energy efficient heating can improve indoor temperatures that support health, while also lowering expenditure on energy and reducing carbon emissions.

























Successful implementation of housing improvements requires the government to work together across the local, regional and national level as well as across different sectors including health, housing and energy. As many interventions need to be realized by homeowners and through the support of the private sector, civil society engagement and collaboration with implementing actors – such as housing managers, architects, urban planners, social housing services, consumer protecting agencies, and the building industry – is crucial.





























Overview

According to UN-Habitat estimates, about 3 billion people – or 40% of the world's population – will need access to adequate housing by 2030 (14). This creates a need for 96 000 new, affordable and accessible housing units every day. Access to safe and healthy housing is a human right and one mechanism through which social and economic inequalities translate into health inequality.

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
1. Develop or update strategies to prevent and reduce household crowding (15).	 Housing  Construction  Land use planning	National; community	Regulation
2. Ensure sufficient indoor housing temperatures to protect residents from the harmful health effects of cold. For countries with temperate or colder climates, 18°C has been proposed as a safe and well-balanced indoor temperature to protect the health of general populations during cold seasons (15).	 Housing  Health  Energy	National; community	Regulation
3. In climate zones with a cold season, install efficient and safe thermal insulation in new housing and retrofit it into existing housing (15).	 Housing  Construction  Energy	National; community	Infrastructure, technology and built environment

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>4. In populations exposed to high ambient temperatures, develop or update strategies to protect populations from excess indoor heat (15).</p>	 Housing  Health  Energy	National; community	Regulation
<p>5. Equip housing with safety devices (such as smoke and carbon monoxide alarms, stair gates and window guards) and take measures to reduce hazards that lead to unintentional injuries (15).</p>	 Housing  Health  Construction	National; community	Infrastructure, technology and built environment
<p>6. Make an adequate proportion of the housing stock accessible to people with functional impairments, based on the current and projected national prevalence of populations with functional impairments and considering trends of ageing (15).</p>	 Housing  Construction  Health	National; community	Regulation; governance
<p>7. Fit ceilings, reduce cracks, screen windows, eaves and doors, and reduce aquatic habitats and breeding sources around houses to hinder vectors from entering the house and reduce vector-borne diseases like malaria, dengue or Chagas disease (16).</p>	 Housing  Health  Construction	National; community Universal health coverage	Infrastructure, technology and built environment
<p>8. Access to healthy housing and tenure security (17):</p> <ul style="list-style-type: none"> • Promote secure tenure and the availability of housing options, including the neutral treatment of tenure options (such as ownership or renting), in order to encourage the development of adequate supplies of affordable housing. • Promote transparent and fair rental markets with a balance of rights and duties between landlords and tenants through adequate legislation and conflict resolution mechanisms in order to facilitate residential and labour mobility. • Contribute to well-functioning, efficient, equitable and transparent housing markets and land markets, which respond to different types of housing demand as well as favouring credit access for socially and economically vulnerable population groups, including through alternative forms of funding, such as housing microfinance. 	 Housing  Finance  Land use planning	National; community	Regulation; governance
<p>9. Introduce loans and subsidies to support homeowners in implementing housing improvement interventions (15).</p>	 Housing  Finance	National; community	Taxes and subsidies
<p>10. Develop or update legislative and regulatory codes to control the design and construction of new dwellings to ensure that the necessary and appropriate precautions and sustainability measures are incorporated to protect against the identified potential threats to health and safety (18).</p>	 Housing  Construction  Health	National; community	Regulation

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>11. Develop or update national and local policies and programmes with defined, prioritized target areas where the most serious conditions in the existing housing stock are likely to be present (18).</p>	 Housing  Construction  Health	<p>National; community</p>	<p>Regulation</p>
<p>12. Raise awareness and educate all those involved in the design, construction, management, maintenance and repair/rehabilitation of housing and building-related equipment about the links between housing conditions and health (18).</p>	 Housing  Construction  Health	<p>National; community Universal health coverage</p>	<p>Information, education and communication</p>
<p>13. Conduct public awareness campaigns to enable householders to make informed decisions such as about adequate room temperatures, by informing them of dangers (such as carbon monoxide and the threats to others from second-hand tobacco smoke) and of important precautions (such as effective ventilation). Household holders should also be made aware of any subsidies that may be available, such as financial assistance towards energy efficiency improvements (18).</p>	 Housing  Health  Energy	<p>National; community Universal health coverage</p>	<p>Information, education and communication</p>
<p>14. Increase involvement of the health sector in the development and implementation of policies and programmes directed at dealing with inadequate housing. Systems should be put in place that enable health professionals to refer patients for housing advice where they present with health conditions and injuries that could be related to housing conditions (18).</p>	 Health	<p>National; community Universal health coverage</p>	<p>Information, education and communication</p>
<p>15. Use integrated slum upgrading strategies to improve the health and well-being of householders in slums, providing them with access to basic services and infrastructure and including them in decision-making processes (19).</p>	 Housing  Construction  Land use planning  Health	<p>National; community Universal health coverage</p>	<p>Infrastructure, technology and built environment</p>
<p>16. Ensure that housing strategies include land use and transport planning for walking, cycling and rapid transit/public transport, as well as access to green areas to enhance health and climate benefits and reduce risks (e.g. urban heat island effect) (18).</p>	 Housing  Construction  Land use planning  Health  Transport	<p>National; community Universal health coverage</p>	<p>Infrastructure, technology and built environment; governance</p>
<p>17. Integrate planning and construction of houses into urban development strategies (4).</p>	 Housing  Construction  Land use planning	<p>National; community</p>	<p>Governance</p>

Selected tools

WHO 2020: *Repository and review of policies, regulations and legislation to promote healthy housing* (20)

The repository provides an overview of policies, regulations and legislation from all six WHO regions to improve housing-related health risks such as crowding, indoor air quality, indoor temperature and building materials. The related review analyses implementation barriers and facilitators of example policies and describes case studies of multisectoral implementation projects.

SHERPA for sustainable housing projects (21)

SHERPA is a self-evaluation tool for project managers, communities and other stakeholders involved in the planning, design, construction and assessment of housing projects.

WHO 2018: *WHO housing and health guidelines* (15)

The WHO housing and health guidelines provide evidence-based and practical recommendations on how to reduce health risks from poor housing conditions. The guidelines summarize all WHO guidance relevant to housing and provide practical implementation considerations such as a list of existing crowding measures or case studies on home modification programmes simultaneously addressing several housing risks.

UN-Habitat 2018: *Alternative solutions to forced evictions and slum demolitions* (22)

Using four real-life cases, this publication prescribes short-term, medium-term and long-term guidance that has prevented forced evictions and mitigated the risks of evictions that have taken place.

UN-Habitat 2017: *The human rights-based approach to housing and slum upgrading* (23)

This handbook is a guide for practitioners upgrading housing and slums in using the human rights-based approach in their interventions by applying methods such as causality analysis, role pattern analysis and capacity gap analysis.

UN-Habitat 2014: *Accessibility of housing. A handbook of inclusive affordable housing for persons with disabilities and older persons* (24)

This handbook aims to bridge the existing gap between the needs and rights of persons with disabilities and older persons through slum upgrading, reconstruction, and large-scale affordable and social housing programmes. Through the provision of concepts, major policy approaches, practical information and technical tools, the handbook intends to build capacity to increase accessibility (such as through design and implementation) in identified contexts. Likewise, it brings to light the implications and the global importance of developing accessibility of sustainable human settlements.

UN-Habitat 2013: *Housing and slum upgrading: gender issue guide* (25)

This guide's objectives are to: i) increase understanding of gender concerns and needs in housing and slum upgrading; ii) develop capacity to address gender issues in this area; iii) encourage the integration of a gender perspective into policies, projects, and programmes for sustainable urban development; and iv) support the institutionalization of the culture of gender mainstreaming and gender equality, the implementation of gender-sensitive projects and programmes, and the monitoring of gender-mainstreaming progress.

UN-Habitat 2010: *A practical guide for conducting housing profiles – revised version* (26)

A practical guide to conducting comprehensive national housing profiles with a direct objective of understanding the housing sector, while offering evidence-based data to inform policy reform. The housing profile process also aims to be highly participatory and engage multi-stakeholder groups that influence and are influenced by the housing sector.

UN-Habitat 2001: *Tools to support participatory urban decision making* (13)

This toolkit is a contribution to the Global Campaign on Urban Governance, an initiative led by UN-Habitat in collaboration with a whole range of partners whose development goal is to contribute to the eradication of poverty through improved urban governance. This toolkit will contribute to the wider dialogue, advocacy and capacity-building efforts towards improved urban governance.

11.3 Workplaces



Overview

More than 1.2 million deaths annually (2015 data) are estimated to be caused by occupational risks (27). Large gaps persist with regard to the health status of workers and their exposure to occupational risks. In addition, only a small minority of the global workforce has access to occupational health services. Nevertheless, effective interventions to prevent occupational hazards and to protect and promote health at the workplace are available (28).

Assessment of national occupational health and safety

Workers' health is determined not only by workplace hazards but also by social and individual factors and access to health services (28).

The following SDG indicators are important for national assessment and monitoring of occupational health and safety.

- Indicator 8.8.1: Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status.
- Indicator 8.8.2: Level of national compliance with labour rights (freedom of association and collective bargaining) based on ILO textual sources and national legislation, by sex and migrant status.
- Indicator 1.3.1: Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable.

In addition, there are SDG targets for monitoring the proportion of informal employment, average hourly earnings, unemployment rates, proportion of youth not in education, employment or training and proportion and number of children aged 5–17 years engaged in hazardous child labour.

Workplaces with a high risk for work-related disease and injury include mining, construction, agriculture and manufacturing. Other occupational groups, such as office- or health care workers, are at risk of specific health conditions such as stress and musculoskeletal diseases or overexertion and infections (27).

Special attention needs to be paid to the approximately 2 billion people (61% of the world's employed population) working in the informal economy. The informal economy involves vulnerable groups such as children, pregnant women, older persons and migrant workers. Informal work has usually harmful effects on workers' rights, social protection and working conditions, thus placing informal workers at greater risk of work-related deaths and disease (29).










What is the level of occupational health and safety we want to achieve?
















SDG 8 focuses on sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (30). Relevant targets include the following.












- Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
- Target 8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training.
- Target 8.7: Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.
- Target 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.







The WHO Global Plan of Action on Workers' Health 2008–2017 (28) underlines the importance of:








- all workers being able to enjoy the highest attainable standard of physical and mental health;
- favourable working conditions for all workers;
- the workplace not threatening health and well-being;
- primary prevention of occupational health hazards;
- all components of health systems to be involved in an integrated response to the specific health needs of working populations.

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
Policies and actions			
1. Develop or update national policies and action plans on occupational safety and health (28, 31, 32).	 Labour  Health  Other sectors	National	Regulation
2. Support implementation of essential occupational health interventions for primary prevention of occupational and work-related diseases and injuries (28). Such measures might include: <ul style="list-style-type: none"> • integrated chemical management; • elimination of second-hand tobacco smoke; • improved occupational safety; • health impact assessment of new technologies, work processes and products at the design stage; • regular assessment of workplace risks and the effectiveness of their control. 	 Labour  Health	Workplace Universal health coverage	Other management and control; assessment and surveillance

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>3. Enforce a basic set of occupational health standards to ensure that all workplaces comply with minimum requirements for health and safety protection (28).</p> <p>This includes enacting regulations, workplace health inspections and collaboration between regulatory agencies.</p>	 Labour  Health	National	Regulation; assessment and surveillance
<p>4. Increase the capacity of the health sector; develop human resources for workers' health (28).</p> <p>This may be achieved through the following actions:</p> <ul style="list-style-type: none"> • extend postgraduate training in relevant disciplines; • build capacity for basic occupational health services; • incorporate workers' health in the training of primary health care practitioners and other health professionals; • create incentives for attracting and retaining human resources for workers' health; • encourage the establishment of networks of services and professional associations. 	 Labour  Health	Health care; workplace Universal health coverage	Information, education and communication
<p>5. Promote inclusion of workers' health in other sectors' policies (28).</p>	 Health	National	Governance
At the workplace			
<p>6. Ensure that workplaces, machinery, equipment and processes are safe and without risks to health (31).</p>	 Health  Other sectors	Workplace Universal health coverage	Other management and control
<p>7. Provide appropriate measures of protection, such as protective clothing, when handling chemical, physical and biological substances and agents that pose risks to health (31).</p>	 Health  Other sectors	Workplace Universal health coverage	Infrastructure, technology and built environment
<p>8. Provide measures to deal with emergencies and accidents in the workplace, including adequate first-aid arrangements, such as cardiopulmonary resuscitation (CPR) (31).</p>	 Health	Workplace Universal health coverage	Other management and control
<p>9. Strengthen primary prevention of occupational hazards, diseases and injuries through increased resources, training of workers and employers, introduction of healthy work practices, work organization and a health-promoting culture at the workplace (28).</p>	 Health	Workplace Universal health coverage	Information, education and communication; other management and control

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
<p>10. Implement appropriate occupational health services for all workers, including informal, migrant and contractual workers, in consultation with representative employer and worker organizations and groups (33).</p> <p>Functions of occupational health services include the following.</p> <ul style="list-style-type: none"> • Assess occupational risks or hazards. • Monitor worker's health in relation to work. • Monitor factors in the working environment that may affect health such as sanitary installations, canteens and housing. • Advise on healthy work planning/organization including workplace design and work equipment. • Participate in programme development for improving work practices and equipment according to health and safety. • Advise on occupational health, safety and hygiene, on ergonomics and protective equipment. • Contribute to measures of vocational rehabilitation. • Collaborate in providing information, training and education about occupational health/hygiene and ergonomics. • Organize and provide first aid and emergency treatment. • Participate in analysis of occupational accidents and occupational diseases. 	 Health	Workplace Universal health coverage	Assessment and surveillance; information, education and communication; other management and control
<p>11. Inform all workers about health hazards involved in their work and provide information, instruction and training on occupational safety and health (33).</p>	 Health	Workplace Universal health coverage	Information, education and communication
<p>12. Promote health and prevent NCDs at the workplace (28).</p> <p>Action points include the following.</p> <ul style="list-style-type: none"> • Promote a healthy diet. • Introduce balanced working time arrangements. • Support tobacco cessation and ban smoking at the workplace. • Promote physical activity and active workplace arrangements to prevent sedentary work. • Prevent work-related NCDs – occupational cancer and chronic respiratory diseases (asthma, COPD and pneumoconiosis). • Promote mental health at work. 	 Health	Workplace Universal health coverage	Information, education and communication; regulation
<p>13. Implement early detection, surveillance and reporting systems for major occupational risks, occupational accidents and diseases (28).</p>	 Health	Workplace Universal health coverage	Assessment and surveillance
<p>14. Implement strategies to ensure reintegration of sick and injured workers (28).</p>	 Health	Workplace Universal health coverage	Other management and control; regulation
<p>15. Build workplace resilience to public health threats and emergencies, such as chemical and radiological incidents, extreme weather events (heatwaves, floods), periods of severe air pollution and outbreaks of infectious diseases in all economic sectors (34).</p>	 Health  Other sectors	Workplace Universal health coverage	Other management and control

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
Health care facilities			
<p>16. Establish occupational health policies and programmes in all health care facilities (35, 36).</p> <p>The WHO-ILO Global Framework for National Occupational Health Programmes for Health Workers includes the following building blocks.</p> <ul style="list-style-type: none"> • Identify a responsible person with authority for occupational health at both the national and workplace levels. • Develop a written policy on safety, health and working conditions for health workforce protection at the national and workplace levels. • Ensure access to occupational health services by strengthening the existing, or establishing a new, occupational health programme, and allocate sufficient resources/budget to the programme, occupational health professional services and the procurement of necessary PPE and supplies. • Create joint labour-management health and safety committees, with appropriate worker and management representation. • Provide ongoing (or periodic) education and training that is appropriate to all parties, including occupational health practitioners, senior executives, front-line managers, health and safety committees, front-line workers and their representatives, and the general public. • Identify hazards and hazardous working conditions in order to prevent and control them, and manage risks by applying the occupational health hierarchy of controls, which prioritizes elimination or control at the source. • Provide pre-service and ongoing immunization against hepatitis B and other vaccine-preventable diseases in the workplace at no cost to the employee (this includes all three doses of the hepatitis B vaccine for all workers at risk of blood exposure, including cleaners and waste handlers). • Promote exposure and incident reporting, eliminating barriers to reporting and providing a blame-free environment. • Promote and ensure health worker access to diagnosis, treatment, care and support for HIV/AIDS, tuberculosis and viral hepatitis B and C. • Utilize appropriate information systems to assist in the collection, tracking, analysing, reporting and acting upon data to promote health and safety of the health care workplace and health workforce. • Ensure that health workers are entitled to compensation for work-related disability in accordance with national laws. 	 Health	<p>Workplace; health care</p> <p>Universal health coverage</p>	<p>Regulation</p>
<p>17. Provide adequate infection prevention and control (IPC) and PPE, such as masks, gloves, goggles, gowns, hand sanitizer, soap and water, cleaning supplies, in sufficient quantities to health care staff and other workers at risk, such as cleaners, that are in contact with potential infectious patients or materials (35-37).</p> <p>Note: Adequate IPC and PPE depend on the procedure performed and on the suspected disease (see section 11.4 Health care facilities for more information).</p>	 Health	<p>Workplace; health care</p> <p>Universal health coverage</p>	<p>Infrastructure, technology and built environment</p>

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
18. Promote hand hygiene and respiratory hygiene as essential preventive measures (37).	 Health	Workplace; health care Universal health coverage	Information, education and communication
19. Ensure single-use of syringes and injection devices if possible by procuring syringes with a sharps injury protection feature (SIP devices) and with a re-use prevention feature (RUP devices). Provide puncture-resistant sharps' containers for safe sharps disposal (37, 38).	 Health	Workplace; Health care Universal health coverage	Infrastructure, technology and built environment
20. Provide information, instruction and training on occupational safety and health including training on IPC, on the correct use of PPE, and on safe patient handling for prevention of back injuries (37).	 Health	Workplace; health care Universal health coverage	Information, education and communication

Selected tools

WHO 2020: Awareness-raising and educational material on how to hand-wash, how to hand-rub and when and how to perform hand hygiene in health care settings (39)

WHO 2020: Immunization of health care workers – summary of WHO Position Papers (40)

WHO 2020: How to put on and take off personal protective equipment (41)

WHO 2020: *Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health* (40)

WHO 2020: *Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected* (41)

WHO 2019: *WHO guidelines on tuberculosis infection prevention and control – 2019 update* (42)

WHO 2019: *Minimum requirements for infection prevention and control (IPC) programmes* (43)

WHO 2019: *How to implement seasonal influenza vaccination of health workers. An introduction manual for national immunization programme managers and policy makers* (42)

WHO 2018: *Occupational safety and health in public health emergencies: a manual for protecting health workers and responders* (44)

WHO 2017: *Prevention of HIV transmission in health care settings* (45)

WHO 2016: *Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level* (37)

WHO 2014: *Guidelines on infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care* (46)

ILO/WHO 2014: *HealthWISE – Work Improvement in Health Services* (47)

WHO/ILO/UNAIDS 2010: *Joint WHO/ILO policy guidelines on improving health worker access to prevention, treatment and care services for HIV and TB* (48)

Pan American Health Organization 2009: *Aide memoire 2009: hepatitis B immunization of health workers* (49)

Selected tools

WHO 2003: *Aide-memoire for a strategy to protect health workers from bloodborne viruses (50)*, which includes a checklist

ILO/International Council of Nurses/WHO/Populations Services International 2002: *Framework guidelines for addressing workplace violence in the health sector (51)*

ILO 2018: *Safety and health in opencast mines. Second (revised) edition (52)*

ILO 2013: *Safety and health in the use of machinery (53)*

ILO 2009: *Safety and health in underground coalmines (54)*

ILO 2005: *Code of practice on safety and health in the iron and steel industry (55)*

ILO 2003: *Safety and health in the non-ferrous metals industries (56)*

ILO 2001: *Ambient factors in the workplace (57)*

Factors include radiation, EMF, heat and cold, noise and vibration.

ILO 2001: *Safety in the use of synthetic vitreous fibre insulation wools (glass wool, rock wool, slag wool) (58)*

ILO 2004: *Safety and health in shipbreaking: guidelines for Asian countries and Turkey (59)*

11.4 Health care facilities



There are a considerable number of co-benefits to health of environmentally responsible practices such as climate change mitigation measures; examples may include use of natural ventilation, capture and use of rainwater, improved recapture and reuse of anaesthetic gases, and well-designed telehealth schemes. Environmentally responsible practices can also increase health equity and access to health care such as the siting of health care facilities along major public transport routes and the development of low-energy or no-energy medical devices (60).



Recommendations listed in the guidance tables in many other sections are relevant for health care and health care facilities, and are not usually repeated here. They can be found in the guidance tables under the rubric “health” and “health care” of the columns showing the sector involved and level of implementation, respectively.













Overview








Access to reliable and sustainable energy is a prerequisite for high-quality health care. Safely managed water, sanitation, access to basic hygiene facilities and adequate waste management are needed to maintain hygienic environments and prevent health care-acquired infections. Occupational health services need to protect health care workers in order to ensure health care delivery. Furthermore, the health sector can adopt a wide range of environmentally responsible practices when offering its health care and prevention services, and help protect and promote health through those practices (60).







Yet as many as 1 in 4 health care facilities lack access to even basic levels of water, exposing 1.8 billion people to greater risk of infections. In addition, 1 in 3 health care facilities lack hand hygiene at points of care, 1 in 3 do not segregate waste safely and 1 in 10 have no sanitation services (based on a 2020 global update from WHO/UNICEF which includes data for 165 countries) (61).


Guidance	Sector principally involved in planning/implementation	Level of implementation	Instruments
WASH and wastewater management			
<p>1. Ensure safety of water for drinking, cooking, personal hygiene, medical activities, cleaning and laundry for the purpose intended (62). Concrete examples may include the following.</p> <ul style="list-style-type: none"> A WSP is implemented, possibly as part of a wider WASH safety plan (see WASH FIT in tools/resources section). Drinking-water meets WHO GDWQ or national standards (63) (see section 3.2.1 Drinking-water for further information). Non-potable water is used only for cleaning, laundry and sanitation and is appropriately labelled. 	 Water/sanitation  Health	Health care Universal health coverage	Regulation; other management and control









 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>2. Ensure availability of sufficient water at all times for drinking, food preparation, personal hygiene, medical activities, cleaning and laundry (62).</p> <p>Note: Sufficient water relates to minimum water quantities required in the health care setting. Set figures are available for planning and designing water supply systems. Actual figures of water quantities required depend on a number of factors, such as size of facility, services offered and number of patients accessing services, climate, level of care and local water use practices.</p>	 Water/sanitation  Health	Health care Universal health coverage	Infrastructure, technology and built environment
<p>3. Provide sufficient water-collection points and water-use facilities in the health care setting to allow convenient access to, and use of, water for medical activities, drinking, personal hygiene, food preparation, laundry and cleaning (62). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • A drinking-water station with safe¹ drinking-water available and accessible for staff, patients and carers at all times and in main waiting areas and/or entrances to each ward and in all rooms where patients stay overnight or receive specialized care. • Functioning hand hygiene stations (water and soap or alcohol-based hand rub) are available at all points of care and service areas. • Hand-washing facilities (water and soap) within 5 metres of all toilets or latrines and at least one shower or bathing area per 40 in-patients or per ward (whichever is lower) and are functioning and accessible. 	 Water/sanitation  Health	Health care Universal health coverage	Infrastructure, technology and built environment
<p>4. Provide adequate, accessible and appropriate toilets for patients, staff and caregivers (62). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • A sufficient number of functional toilets are available, separated by sex and by staff/patient status. • Toilets are easily accessible, safe to use and are appropriate for local technical, financial, cultural and social conditions. • Toilets have a functioning hand-washing facility with soap and water within 5 metres. • Toilets are cleaned at least once daily and are adequately maintained and repaired if any problems arise. • At least one functional toilet provides the means to manage menstrual hygiene needs and can be accessed by those with limited mobility. • Excreta and wastewater is safely managed and treated according to WHO guidelines (64). 	 Water/sanitation  Health	Health care Universal health coverage	Infrastructure, technology and built environment; regulation












¹ Drinking-water has appropriate chlorine residual (0.2mg/L or 0.5mg/L in emergencies) or 0 E. coli/100 ml.







 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>5. Promote correct use of water, sanitation and waste facilities (62). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Staff, are trained and educated about IPC practices, environmental cleaning and waste management necessary for limiting disease transmission, and compliance and monitoring activities are undertaken regularly (65). • Dedicated, trained cleaning staff are available and appropriate and well-maintained materials for cleaning (i.e. detergent, mops, buckets, etc.) are available. • Hand hygiene promotion materials are displayed in all wards/ treatment areas and clearly visible. • Facilities and resources enable staff, patients and caregivers to practise behaviours that control disease transmission in an easy and timely way. 	 Health	<p>Health care</p> <p>Universal health coverage</p>	<p>Information, education and communication</p>
<p>6. Ensure rapid and safe wastewater disposal (62, 66). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Wastewater is conveyed safely away from the facility to treatment with minimal leaks/overflows. • Wastewater drainage is built and managed to avoid contamination of the health care setting or the broader environment. • A stormwater (i.e. rainwater) and greywater drainage system is in place that diverts water away from the facility into a safe drainage or leach field and does not carry contamination from the health care setting to the outside surrounding environment. • Hazardous chemical waste and pharmaceuticals are not discharged into wastewater. 	 Water/sanitation	<p>Health care</p>	<p>Infrastructure, technology and built environment</p>
<p>7. Implement an IPC programme (37). The basic set of IPC guidelines should include as a minimum:</p> <ul style="list-style-type: none"> • standard precautions; • hand hygiene; • use of PPE; • sterilization and medical devices decontamination; • safe handling of linen and laundry; • health care waste management; • patient placement; • respiratory hygiene and cough etiquette; • environmental cleaning; • principles of asepsis; • prevention of injuries from sharp instruments and post-exposure prophylaxis; • transmission-based precautions; • aseptic technique and device management for clinical procedures, according to the scope of care. <p>Since the scope of practices may be very different in health care facilities according to the type of care offered, the guidelines should prioritize the most frequent and/or risky practices and settings.</p>	 Health	<p>Health care</p> <p>Universal health coverage</p>	<p>Other management and control</p>

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
<p>8. Educate/train health care facility staff on crucial moments to perform hand hygiene and appropriate techniques for hand washing and hand rubbing (39).</p> <p>Five moments when to perform hand washing in health care include:</p> <ul style="list-style-type: none"> • before touching a patient • before clean/aseptic procedure • after body fluid exposure risk (and after glove removal) • after touching a patient • after touching a patient's surroundings. <p>More detailed guidance is available in the <i>WHO guidelines on hand hygiene in health care</i> (67).</p>	 Health	<p>Health care</p> <p>Universal health coverage</p>	<p>Information, education and communication</p>
Waste management			
See also Chapter 5. Chemicals for waste containing mercury.			
<p>9. Consider as much as possible options for waste minimization, environmentally preferable purchasing and green procurement, and safe reuse, recycling and recovery (68). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Ensure all staff practise appropriate waste segregation at all points of care using a three-bin system. • Raise awareness about and train medical staff in clinical and general practices to use or waste fewer materials, with techniques such as the “first in, first out” principle (what has been purchased first, should also be used first). • Choose approaches to ordering supplies that generate less waste, such as more frequent ordering of relatively small quantities, particularly for unstable products, and selecting products that produce less or less hazardous waste. • Use physical rather than chemical cleaning methods (e.g. steam disinfection). • Purchase hazardous chemicals centrally and monitor their use. • Procure equipment made from plastics that can be more easily recycled (e.g. polyethylene, polypropylene and polyethylene terephthalate instead of polyvinyl chloride or mixed materials such as paper covered in plastics). • Implement an environmental management system. 	 Waste	<p>Health care</p>	<p>Other management and control; regulation</p>

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
<p>10. Ensure safe segregation, collection, transportation, storage, treatment and disposal of health care waste (62, 66). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Trained waste handlers are available and have sufficient PPE to carry out their duties safely. • Waste segregation should be nationally standardized, should rely on a uniform colour coding or labelling system and should at the least segregate general waste from sharps waste and (other) infectious waste. • General waste and infectious or hazardous waste should be collected, transported and stored separately. • Collection and internal transportation should happen at fixed times and fixed waste routes from the most to the least hygienically sensitive area. • Internal waste storage locations must be totally enclosed and well separated from other areas; the storage location for infectious and sharps waste must be clearly identifiable with floors and walls sealed or tiled. External waste storage should be fenced as a minimum. Only authorized staff should have access to the waste storage areas. Maximum storage times for infectious waste, which are temperature dependent, need to be considered. • In general, health-care waste should be treated using a technique which minimizes the formation and release of chemicals or hazardous emissions. Infectious and sharps waste should generally be treated by steam or other non-burn technologies where these options are locally available and sustainable. • Final disposal should happen in designated places outside the premises of the health care facility. A functional burial pit/fenced waste dump or municipal pick-up should be available for disposal of non-infectious (non-hazardous/general) waste and waste disposal areas should be built to withstand climate-events and emergencies. • Pharmaceutical waste should be treated and disposed of safely by one of the following options: at a centrally managed safe treatment & disposal facility (i.e. off-site)/sent back to the manufacturer/co-incinerated by industries using high-temperature kilns. 	 Waste	Health care	Other management and control
Access to energy			
11. Prioritize electrification of all health care facilities to ensure basic health care services (69). See also energy subsection (point 14) under Climate change/environmental degradation below.	 Energy	Health care Universal health coverage	Infrastructure, technology and built environment

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
Climate change/environmental degradation			
<p>12. Building: build and renovate in an environmentally responsible and sustainable way (70, 71). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Siting: orientation relative to the sun path, accessibility by public transport, foot and bike, with access to water, and not in a flood-prone area. • Lighting, shading: use of natural sources (daylight and vegetation) and renewable energies such as solar energy. • Ventilation: use of natural ventilation, optimized window siting that enables cross ventilation. • Walls and roofs: insulation, double walls and roofs, reflective materials and colour, built to withstand extreme weather events. 	 Construction	Health care	Infrastructure, technology and built environment
<p>13. Food: implement a sustainable food system (70). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Implement a sustainable food plan, which includes local/ regional food procurement. • Reduce the use of disposable products. • Implement measures to reduce food waste. 	 Food	Health care	Other management and control
<p>14. Energy: develop or update clean energy policies to promote increased health-sector reliance on clean energy, promote energy efficiency and ensure that appropriate resources and responsibilities are allocated to the management (and maintenance) of health facility energy resources (70, 71). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Implement energy conservation plans. • Use clean energy sources for heating water and electricity. • Replace inefficient light bulbs such as incandescent bulbs with more efficient alternatives such as LED, if suitable for the application. 	 Energy	Health care	Regulation; taxes and subsidies; infrastructure, technology and built environment
<p>15. Water: reduce the use of potable water (70). Concrete examples may include the following.</p> <ul style="list-style-type: none"> • Develop/update a water conservation plan. • Employ water conservation strategies such as a rainwater capture system for uses other than drinking. • Repair leaking faucets and pipes. • Use technologies to maximize water savings such as high-efficiency plumbing fixtures, low-flow or motion-activated faucets (where regular water quality monitoring exists) and dual-flush toilets. • Raise awareness among staff, patients and visitors about the need to conserve water. • Reduce water use for landscaping such as through drought-relevant species, drip irrigation or mulching. 	 Water/sanitation	Health care	Regulation; infrastructure, technology and built environment; Information, education and communication

 Guidance	 Sector principally involved in planning/implementation	 Level of implementation	 Instruments
Chemicals			
See also the points under the <i>Climate change/environmental degradation</i> and <i>Waste management</i> subsections above.			
16. Establish safe procedures for procuring, storing, dispensing and proper disposal of pharmaceuticals (70).	 Health	Health care	Regulation; other management and control
17. Phase out/replace items that contain mercury, complying with the Minamata Convention on Mercury (66, 72).	 Health	Health care	Regulation
18. Phase out or replace substances with high ozone depleting or global warming potential (70). Concrete examples may include the following. <ul style="list-style-type: none"> • Buy equipment that uses minimally polluting refrigerants and has a reduced refrigerant charge. • Ensure regular maintenance of equipment containing refrigerant to avoid leakage or release into the atmosphere. • Phase out ozone-depleting substances in fire suppression systems. 	 Environment  Health	Health care	Regulation
Radiation			
19. Implement procedures and guidelines to ensure that justification of radiologic imaging becomes an effective, transparent and accountable part of normal radiological practice (73, 74).	 Health	Health care Universal health coverage	Regulation
20. Enhance the implementation of the principle of optimization of radiation protection and safety (73, 74). Concrete examples may include the following. <ul style="list-style-type: none"> • Develop and regularly update evidence-based imaging referral guidelines and make them available at the point of care as decision-support tools for enhance justification of radiological procedures (75, 76). • Establish and use up-to-date diagnostic reference levels for adult and paediatric patients, and quality assurance programmes for radiological procedures. • Implement harmonized criteria and develop detailed guidance for the release of patients after radionuclide therapy. • Apply technological solutions, such as electronic health records, for harmonized monitoring of radiation exposure. 	 Health	Health care Universal health coverage	Regulation
21. Ensure that health care staff are appropriately trained in radiation protection. Pay particular attention to the training of health professionals in situations of implementing new technology (74).	 Health	Health care Universal health coverage	Information, education and communication

 Guidance	 Sector principally involved in planning/ implementation	 Level of implementation	 Instruments
<p>22. Prevent medical radiation incidents and accidents (73, 74).</p> <p>Points to consider may include the following.</p> <ul style="list-style-type: none"> • Integrate radiation protection contents into the curricula of medical and dental schools, and in the education and periodic training of health professionals involved in the use of radiation in health care. • Create reporting and learning systems for medical radiation incidents/accidents and near misses, perform root cause analysis and prospective risk assessment analysis to inform preventive actions and enhance safety culture (75). • Implement independent safety surveillance and verification and perform periodic quality and safety assessments in health facilities using radiation for diagnostic or therapeutic purposes. 	 Health	Health care Universal health coverage	Assessment and surveillance; other management and control
<p>23. Increase awareness about radiation benefits and risks among health care staff and patients. Train health care staff in radiation risk communication. Enable an active and informed decision-making process for patients (73, 74, 76).</p>	 Health	Health care Universal health coverage	Information, education and communication

Selected tools

See [Chapter 3 WASH](#), including the fact sheets under *selected tools* in [3.3 Sanitation](#).

WHO/UNICEF 2019: Monitoring WASH and related infection prevention and control in delivery rooms – draft module (77)

WHO/UNICEF 2018: Water and Sanitation for Health Facility Improvement Tool (WASH FIT) (78)
 WASH FIT is a risk-based management approach developed by WHO and UNICEF to assist health care facilities improve quality of care through improved WASH. It includes an assessment tool to enable a comprehensive assessment of WASH and IPC within a facility.

WHO/UNICEF 2018: *Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals* (79)

WHO 2010: *Hand Hygiene Self-Assessment Framework* (65)

WHO 2008: *Essential environmental health standards in health care* (62)

This report contains an assessment checklist which provides a set of questions for the listed recommendations on water quality and quantity, water facilities and access to water, excreta disposal, wastewater disposal and health care waste disposal.

WHO 2020: WHO IPC core components – implementation tools and resources (80), which includes a facility-level assessment tool.

WHO/UNICEF 2020: Knowledge portal on WASH and waste in health care facilities (81)

This includes over 400 tools, standards and training reports, mostly for the country level.

WHO/UNICEF 2020: *Global progress report on WASH in health care facilities: fundamentals first* (61)

Publication provides the latest data on access and implementing World Health Assembly resolution WHA72.7 on WASH in health care facilities, country case studies and efforts to integrate WASH with health.

Health care waste management

Selected tools

WHO 2014 and 2017: Safe management of wastes from health-care activities, second edition and a summary of guidance (66, 68)

Handbooks for public health managers and policy-makers, hospital managers, environmental health professionals, and all administrators with an interest in and responsibility for waste management.

WHO 2019: *Overview of technologies for the treatment of infectious and sharp waste from health care facilities* (82)

Climate change/environmental degradation

WHO 2020: *WHO guidance for climate-resilient and environmentally sustainable health care facilities* (83)

This guidance provides a set of suggested interventions in four key areas for providing safe and quality care in the context of climate change: i) the health workforce; ii) water, sanitation, hygiene and health care waste management; iii) sustainable energy services; and iv) infrastructure, technologies and products.

Pan American Health Organization 2017: *Smart Hospitals Toolkit* (70)

The Smart Hospitals Toolkit is a practical guide for hospital administrators, health disaster coordinators, health facility designers, engineers and maintenance staff to achieve Smart Health Facilities by conserving resources, cutting costs, increasing efficiency in operations and reducing carbon emissions.

UNDP 2020: *Solar for Health* (84)

The Solar for Health initiative supports governments to increase access to high-quality health services through the installation of solar energy photovoltaic systems (PV), ensuring constant and cost-effective access to electricity, while also mitigating the impact of climate change and advancing multiple SDGs.

Health Care Without Harm/UNDP (2020): *Sustainable Health in Procurement Project* (85)

UNDP's Sustainable Health in Procurement Project is a programme in collaboration with Health Care Without Harm that aims to reduce the harm to people and the environment caused by the manufacture, use and disposal of medical products and by the implementation of health programmes.

References

1. World urbanization prospects. The 2018 revision. New York (NY): United Nations; 2019 (<https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf>, accessed 2 June 2021).
2. UN Habitat, WHO. Integrating health in urban and territorial planning: sourcebook for urban leaders, health and planning professionals. Geneva: UN Habitat, World Health Organization; 2020 (<https://unhabitat.org/integrating-health-in-urban-and-territorial-planning-a-sourcebook-for-urban-leaders-health-and>, accessed 4 August 2020).
3. The power of cities: tackling noncommunicable diseases and road safety. Geneva 2019 (<https://apps.who.int/iris/handle/10665/329429>, accessed 15 January 2021).
4. Health as the pulse of the new urban agenda. United Nations Conference on Housing and Sustainable Urban Development. 2016 (<https://apps.who.int/iris/handle/10665/250367>, accessed 14 June 2021).
5. Health in All Policies: training manual. Geneva: World Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/151788>, accessed 15 June 2021).
6. Commission of the Pan American Health Organization on Equity and Health Inequalities in the Americas. Just Societies: Health Equity and Dignified Lives. Washington, D.C.: Pan American Health Organization; 2019 (<https://iris.paho.org/handle/10665.2/51571>, accessed 15 January 2021).
7. Guidance and tools. In: Urban Health Initiative [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/initiatives/urban-health-initiative/guidance-and-tools>, accessed 8 June 2021).
8. Global Land Tool Network [website]. UN Habitat; 2020 (<https://gltn.net/>, accessed 29 November 2020).
9. Urban green spaces: a brief for action. Copenhagen: WHO Regional Office for Europe; 2017 (<https://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2017/urban-green-spaces-a-brief-for-action-2017>, accessed 15 January 2021).
10. FAO. City region food systems programme. Rome: Food and Agriculture Organization; 2020 (<http://www.fao.org/in-action/food-for-cities-programme/approach/need-for-sustainable-and-resilient-crfs/en/>, accessed 29 November 2020).
11. Measuring the age-friendliness of cities: a guide to using core indicators. Kobe: World Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/203830>, accessed 15 June 2021).
12. Shaping urbanization for children. A handbook on child-responsive urban planning. New York (NY): United Nations Children's Fund; 2018 (<https://www.unicef.org/reports/shaping-urbanization-children>, accessed 8 June 2021).
13. Tools to support participatory urban decision making. Nairobi: United Nations-Habitat; 2001 (<https://unhabitat.org/tools-to-support-participatory-urban-decision-making>, accessed 15 January 2021).

14. Housing [website]. Nairobi: United Nations Habitat; 2021 (<https://unhabitat.org/topic/housing>, accessed 2 June 2021).
15. WHO Housing and health guidelines. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/276001>, accessed 15 June 2021).
16. Keeping the vector out - Housing improvements for vector control and sustainable development. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/259404>, accessed 15 June 2021).
17. The Geneva UN Charter on Sustainable Housing. Geneva: United Nations Economic Commission for Europe; 2015 (<https://apps.who.int/iris/handle/10665/276001>, accessed 15 June 2021).
18. Environmental burden of disease associated with inadequate housing. Copenhagen: WHO Regional Office for Europe; 2011 (<https://www.euro.who.int/en/publications/abstracts/environmental-burden-of-disease-associated-with-inadequate-housing-summary-report>, accessed 15 January 2021).
19. Health equity benefits of integrated slum upgrading. Geneva: World Health Organization; 2020.
20. Policies, regulations & legislation promoting healthy housing: a review. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/i/item/9789240011298>, accessed 15 June 2021).
21. SHERPA. Global Network of Sustainable Housing. SHERPA; 2020 (<https://www.sherpa4housing.org/>, accessed 8 April 2020).
22. Alternative solutions to forced evictions and slum demolition. Nairobi: UN Habitat; 2018 (https://unhabitat.org/sites/default/files/download-manager-files/forced%20evictions_final.pdf, accessed 8 April 2020).
23. The human rights-based approach to housing and slum upgrading. Nairobi: UN Habitat; 2017 (<https://unhabitat.org/sites/default/files/download-manager-files/The%20Human%20Rights-Based%20Approach%20to%20Housing%20and%20Slum%20Upgrading.pdf>, accessed 8 April 2020).
24. Accessibility of Housing. A handbook of inclusive affordable housing for persons with disabilities and older persons. Nairobi: UN Habitat; 2014 (<https://unhabitat.org/accessibility-of-housing>, accessed 15 January 2021).
25. Housing and slum upgrading: gender issue guide. Nairobi: UN Habitat; 2013 (<https://unhabitat.org/housing-and-slum-upgrading-gender-issue-guide>, accessed 15 January 2021).
26. A practical guide for conducting housing profiles -revised version. Nairobi: UN Habitat; 2011 (<https://unhabitat.org/a-practical-guide-for-conducting-housing-profiles-revised-version>, accessed 15 January 2021).
27. Wolf J, Prüss-Ustün A, Ivanov I, Mugdal S, Corvalán C, Bos R et al. Preventing disease through a healthier and safer workplace. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/272980>, accessed 15 June 2021).
28. Workers' health: global plan of action. 2007 (https://www.who.int/occupational_health/WHO_health_assembly_en_web.pdf?ua=1, accessed 25 October 2019).
29. Women and men in the informal economy: a statistical picture. Geneva: International Labour Organization; 2018 (https://www.ilo.org/wcmsp5/groups/public/-/-dgreports/-/-dcomm/documents/publication/wcms_626831.pdf, accessed 22 April 2020).
30. Sustainable Development Goals. Knowledge platform. New York (NY): United Nations; 2020 (<https://sustainabledevelopment.un.org/sdgs>, accessed 19 March 2020).
31. C155 - Occupational Safety and Health Convention (No. 155). Geneva: International Labour Organization; 1981 (https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::p12100_instrument_id:312300, accessed 22 April 2020).
32. C187 - Promotional Framework for Occupational Safety and Health Convention (No. 187). Geneva: International Labour Organization; 2006 (https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C187, accessed 22 April 2020).
33. C161 - Occupational Health Services Convention (No. 161). Geneva: International Labour Organization; 1985 (https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C161, accessed 22 April 2020).
34. Political declaration of the high-level political forum on sustainable development convened under the auspices of the General Assembly. New York: United Nations; 2019 (<https://undocs.org/en/A/RES/74/4>, accessed 25 June 2020).
35. WHO, ILO. WHO–ILO Global Framework for National Occupational Health Programmes for Health Workers. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/detail/10-06-2020-who-ilo-global-framework-for-national-occupational-health-programmes-for-health-workers>, accessed 25 June 2020).
36. WHO, ILO. Caring for those who care. National Programmes for Occupational Health for Health Workers. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/336479>, accessed 4 November 2020).
37. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/251730>, accessed 22 April 2020).
38. WHO guideline on the use of safety-engineered syringes for intramuscular, intradermal and subcutaneous injections in health care settings. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/250144>, accessed 22 April 2020).

39. My 5 Moments for Hand Hygiene. Geneva: World Health Organization; 2020 (<https://www.who.int/campaigns/world-hand-hygiene-day>, accessed 5 June 2021).
40. Summary of WHO Position Papers – Immunization of Health Care Workers. Geneva2020 (https://www.who.int/immunization/policy/Immunization_routine_table4.pdf, accessed 4 November 2020).
41. How to put on and take off Personal Protective Equipment (PPE). Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/70066>, accessed 15 June 2021).
42. WHO guidelines on tuberculosis infection prevention and control – 2019 update. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311259>, accessed 23 April 2019).
43. Minimum Requirements for infection prevention and control (IPC) programmes. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/330080>, accessed 15 June 2021).
44. Occupational safety and health in public health emergencies: a manual for protecting health workers and responders. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/275385>, accessed 15 June 2021).
45. Prevention of HIV Transmission in Health Care Settings. Geneva: World Health Organization; 2017 (<https://www.who.int/hiv/pub/toolkits/HIV%20transmission%20in%20health%20care%20settings.pdf>, accessed 15 June 2021).
46. Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. Geneva: World Health Organization; 2014 (<http://apps.who.int/iris/10665/112656>, accessed 29 October 2015).
47. HealthWISE - Work Improvement in Health Services. Geneva: International Labour Organization; 2014 (https://www.ilo.org/sector/Resources/training-materials/WCMS_250540/lang--en/index.htm, accessed 25 June 2020).
48. WHO, UNAIDS, ILO. Joint WHO-ILO-UNAIDS policy guidelines on improving health workers' access to HIV and TB prevention, treatment, care and support services. World Health Organization, UNAIDS, International Labour Organization; 2010 (https://www.ilo.org/global/topics/hiv-aids/publications/WCMS_149714/lang--en/index.htm, accessed 15 June 2021).
49. Aide Memoire - Hepatitis B Immunization of Health Workers. Washington: Pan American Health Organization; 2009 (<https://www.paho.org/en/documents/aide-memoire-hepatitis-b-immunization-health-workers>, accessed 4 November 2020).
50. Aide-Mémoire for a strategy to protect health workers from bloodborne viruses. Geneva: World Health Organization; 2003 (<https://apps.who.int/iris/handle/10665/68354>, accessed 15 June 2021).
51. ILO, ICN, WHO, PSI. Framework guidelines for addressing workplace violence in the health sector. Geneva: International Labour Organization; 2002.
52. Safety and health in opencast mines. Second (revised) edition. Geneva: International Labour Organization; 2018 (https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/normativeinstrument/wcms_617123.pdf, accessed 8 February 2021).
53. Safety and health in the use of machinery. Geneva: International Labour Organization; 2013 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_164653.pdf, accessed 8 February 2021).
54. Safety and health in underground coalmines. Geneva: International Labour Organization; 2009 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_110254.pdf, accessed 8 February 2021).
55. Code of practice on safety and health in the iron and steel industry. Geneva: International Labour Organization; 2005 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_112443.pdf, accessed 8 February 2021).
56. Safety and health in the non-ferrous metals industries. Geneva: International Labour Organization; 2003 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107713.pdf, accessed 8 February 2021).
57. Ambient factors in the workplace. Geneva: International Labour Organization; 2003 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107729.pdf, accessed 8 February 2021).
58. Safety in the use of synthetic vitreous fibre insulation wools (glass wool, rock wool, slag wool). Geneva: International Labour Organization; 2001 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107790.pdf, accessed 8 February 2021).
59. Safety and health in shipbreaking: Guidelines for Asian countries and Turkey. Geneva: International Labour Organization; 2004 (https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107689.pdf, accessed 8 February 2021).
60. Health in the green economy: health care facilities. Geneva: World Health Organization; 2011 (<https://www.who.int/publications/i/item/health-in-the-green-economy-health-care-facilities>, accessed 15 June 2021).
61. WHO, UNICEF. Global progress report on WASH in health care facilities: fundamentals first. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337604>, accessed 15 June 2021).
62. Essential environmental health standards in health care. Geneva: World Health Organization; 2008 (<https://apps.who.int/iris/handle/10665/43767>, accessed 14 June 2021).
63. Water safety planning: a roadmap to supporting resources. Geneva: World Health Organization; 2017 (https://www.who.int/water_sanitation_health/publications/wsp-roadmap.pdf?ua=1, accessed 27 March 2020).

64. Guidelines on sanitation and health. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/274939>, accessed 15 June 2021).
65. WHO Hand Hygiene Self-Assessment Framework. Geneva: World Health Organization; 2010 (https://www.who.int/gpsc/country_work/hhsa_framework_October_2010.pdf?ua=1, accessed 8 June 2021).
66. Safe management of wastes from health-care activities: A summary. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/259491>, accessed 15 June 2021).
67. WHO guidelines on hand hygiene in health care. Geneva: World Health Organization; 2009 (<https://apps.who.int/iris/handle/10665/44102>, accessed 17 April 2020).
68. Safe management of wastes from health-care activities. 2nd ed. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/85349>, accessed 15 June 2021).
69. WHO, UNDP. Global energy and health platform of action. Action brief #2. New York: UN; 2019 (https://sustainabledevelopment.un.org/content/documents/24066ab2_cover.pdf, accessed 16 June 2020).
70. Smart hospitals toolkit. Washington (DC): Pan American Health Organization; 2017 (https://www.paho.org/disasters/index.php?option=com_docman&view=download&category_slug=smart-hospitals-toolkit&alias=2495-smart-hospitals-toolkit-2017-5&Itemid=1179&lang=en, accessed 8 June 2021).
71. Policy brief 10. Health and energy linkages - maximising health benefits from the sustainable energy transition.: United Nations,; 2018 (<https://sustainabledevelopment.un.org/content/documents/17486PB10.pdf>).
72. Minamata Convention on Mercury. UN Environment; 2013 (<http://www.mercuryconvention.org/Convention/Text/tabid/3426/language/en-US/Default.aspx>, accessed 30 September 2018).
73. IAEA, WHO. Bonn Call for Action. 10 Actions to Improve Radiation Protection in Medicine in the Next Decade. Vienna: International Atomic Energy Agency, World Health Organization; 2012 (https://www.who.int/ionizing_radiation/medical_radiation_exposure/BonnCallforAction2014.pdf?ua=1, accessed 15 June 2021).
74. IAEA, ILO, PAHO, WHO. Radiation Protection and Safety in Medical Uses of Ionizing Radiation, IAEA Safety Standards Series No. SSG-462018 (<https://www.iaea.org/publications/11102/radiation-protection-and-safety-in-medical-uses-of-ionizing-radiation>, accessed 8 October 2020).
75. Use of chest imaging in COVID-19. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/use-of-chest-imaging-in-covid-19>, accessed 15 January 2021).
76. Chest radiography in tuberculosis detection. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/252424>, accessed 15 January 2021).
77. JMP. Monitoring water, sanitation and hygiene (WASH) and related infection prevention and control (IPC) in delivery rooms. Final draft 2019. (<https://washdata.org/monitoring/health-care-facilities>, accessed 15 June 2021).
78. Water and sanitation for health facility improvement tool (WASH FIT). Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/254910>, accessed 15 June 2021).
79. WHO, UNICEF. Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. Geneva: World Health Organization, UNICEF; 2018 (<https://apps.who.int/iris/handle/10665/275783>).
80. Core components for IPC - Implementation tools and resources. Geneva: World Health Organization; 2020 (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/core-components>, accessed 15 June 2021).
81. WHO, UNICEF. WASH in health care facilities. Geneva: World Health Organization, UNICEF; 2020 (<https://www.washinhealth.org/>, accessed 30 November 2020).
82. Overview of technologies for the treatment of infectious and sharp waste from health care facilities. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/328146>, accessed 15 June 2021).
83. WHO guidance for climate-resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/335909>, accessed 23 October 2020).
84. Solar for health. United Nations Development Programme; 2020 (<https://www.undp-capacitydevelopment-health.org/en/capacities/focus/solar-for-health/>, accessed 24 December 2020).
85. Health Care Without Harm. Sustainable health in procurement project. Health Care Without Harm; (<https://noharm-global.org/issues/global/sustainable-health-procurement-project#what>, accessed 24 December 2020).

World Health Organization

Department of Environment, Climate Change and Health
Division of Universal Health Coverage / Healthier Populations
20, Avenue Appia
CH-1211 Geneva 27
Switzerland

www.who.int/teams/environment-climate-change-and-health