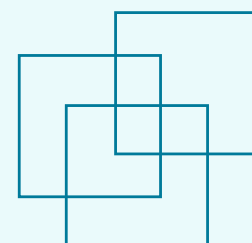




International
Labour
Office

WASH@Work

a Self-Training Handbook





International
Labour
Office

WASH@Work

a Self-Training Handbook

Copyright © International Labour Office 2016

First published 2016

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to ILO Publications (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland, or by email: pubdroit@ilo.org. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered with reproduction rights organizations may make copies in accordance with the licences issued to them for this purpose. Visit www.ifrro.org to find the reproduction rights organization in your country.

WASH@Work: a Self-Training Handbook

978-92-2-128523-6 (print)

978-92-2-128524-3 (web pdf)

WASH@Work: a self-training handbook: first module: international policy framework / International Labour Office. - Geneva: ILO, 2016.

ISBN: 9789221285236; 9789221285243 (web pdf)

International Labour Office.

occupational health / occupational safety / water quality / sanitation / hygiene / training policy / teaching material

13.04.2

ILO Cataloguing in Publication Data

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications and electronic products can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. Catalogues or lists of new publications are available free of charge from the above address, or by email: pubvente@ilo.org

Visit our website: www.ilo.org/publns

Design by the International Training Centre of the ILO, Turin – Italy



These training tools were partly funded by the UN-Water Inter-Agency Trust Fund. The views and opinions expressed herein do not necessarily reflect those of the Members and Partners of UN-Water.



PREFACE

The link between health and access to safe water, sanitation and hygiene (WASH) is well documented. Since workplaces represent a major focus in the life of workers and employers, access to WASH in workplaces can contribute greatly to both occupational and general health. In an effort to advance towards both Sustainable Development Goals (SDGs) number 6, to ensure universal access to water and sanitation, and number 8, to ensure decent work and sustainable economic growth, it is crucial to propose effective solutions that improve working conditions, increase productivity and reach the most vulnerable communities. Actions towards these ambitious objectives require coordinated efforts by governments, workers and employers, at multiple levels.

The ILO promotes decent work in all economic sectors, at the country level and in global supply chains. As part of this effort, ILO's member States and the social partners (employer and worker organizations) have adopted a broad array of international instruments to promote occupational safety and health (OSH). The ILO has also developed several training tools, among them, the Work Improvements in Small Enterprises (WISE), Work Improvements in Health Services (HealthWISE), Work Improvement in Neighbourhood Development (WIND), Work Adjustment for Recycling and Managing Waste (WARM), Work Improvement for Safe Home (WISH), and Work Improvement in Small Construction Sites (WISCON).

Most of these tools highlight the importance of access to WASH in the workplace for attaining the ILO's strategic objectives. The rural economy is a strategic priority of the ILO, for which WASH is particularly important as a means to improve working conditions. Other initiatives include research to expand knowledge of the most pertinent public policies for workers and their families in this area.

To further these objectives, the ILO Sectoral Policies and Governance and Tripartism Departments present four self-training modules, which adapt existing ILO training tools on OSH to provide governments, workers and employers with the necessary skills to implement the general principles contained in relevant ILO instruments. It is also the ILO's main contribution to the WASH4Work initiative, launched in the UN headquarters on World Water Day 2016 in collaboration with several UN-Water members and partners. This initiative seeks to create awareness among governments, employers and workers about these issues.

The modules will provide basic skills to practitioners from governments, from workers' and employers' organizations to implement the relevant ILO standards and Codes of Practice. This includes recognizing the importance of access to water and adequate sanitation and hygiene; how to configure workplaces to make them appropriate for workers to adequately and conveniently access WASH provisions; and supervising provisions of WASH installations and facilities. The modules also provide checklists that can help improve working conditions and productivity.

The first module was drafted by Halshka Graczyk, Pia Markkanen, and Carlos R. Carrión-Crespo, and the remaining modules were drafted by Halshka Graczyk. We would like to thank Mr Akira Isawa, Deputy Director of the Sectoral Policies Department, who coordinated this work, and all the colleagues who contributed to improve the draft: Manal Azzi, Pavan Baichoo, Dominik Danakas, Sabine de Bruijn, Mariangels Fortuny, Graciela Jolidon, Margherita Licata, Yasuhiko Kamakura, Céline Moreau, Gabriel Rompré, Amrita Sietaram, Kelly Sharp, Edmundo de Werna Magalhães, Christiane Wiskow and Monique Zarka-Martres from the ILO, as well as Sara Traubel from the World Business Council for Sustainable Development, Gabriela Galíndez from Water and Sanitation for the Urban Poor, Maisoon Chowdhury from the UN Foundation, and Lizette Burgers, Cindy Kushner and

Brooke Yamakoshi from UNICEF. In addition, we would like to thank WaterAid's hygiene and inclusion advisors (Om Prasad Gautam, Thérèse Mahon, Jane Wilbur, and Megan Wilson-Jones) and sanitation and inclusion advisors (Andrés Hueso, Rémi Kaupp, Ada Oko-Williams, and Jane Wilbur), whose contributions were coordinated by Hannah Greig.

We hope that these modules will prove useful in promoting practical approaches that allow all stakeholders to contribute to the realization of the SDGs.

Alette van Leur

Director, Sectoral Policies
Department

Moussa Oumarou

Director, Department of
Governance and Tripartism



CONTENTS

Preface	III
Abbreviations	VII
1. Introduction	1
1.1. How to use WASH@Work	1
2. WASH in the workplace: the Decent Work approach	4
2.1. Risk assessment approaches	5
3. International Labour Standards and Codes of Practice on access to WASH	7
3.1. WASH in the rural economy	9
3.2. WASH in the urban economy	16
3.3. WASH in the service economy	18
3.4. WASH in maritime and offshore activities	19
3.5. WASH regarding the working environment	22
4. Conclusion	25
References	26

MODULE 1: WATER

TRAINING GUIDE	Guide 1.1 Safe drinking water	30
	1 Microbial threats	30
	2 Chemical threats	31
	3 Radiological threats	31
	Guide 1.2 Safe water for personal and workplace hygiene	39
	1 Water for personal hygiene	39
	2 Water for workplace hygiene	40
	3 Water for food hygiene	40
	Guide 1.3. Drainage, vector control and water-related risks	41
	1 Drainage	41
2 Drainage for vector control	42	
3 Water-related risks	42	
ACTION MANUAL	G1.1 Government Action Manual: Water	44
	E1.2 Employer's Action Manual: Water	49
	W1.3 Workers' Action Manual: Water	56



MODULE 2: SANITATION

TRAINING GUIDE

Guide 2.1 Sanitary facilities 62

Guide 2.2 Wastewater and faecal sludge management 67

Guide 2.3 Solid waste management and disposal 71

ACTION MANUAL

G2.1 Government Action Manual: Sanitation 74

E2.2 Employers' Action Manual: Sanitation 78

W2.3 Workers' Action Manual: Sanitation 86

MODULE 3: HYGIENE

TRAINING GUIDE

Guide 3.1. Hand hygiene 92

1 Washbasins (or other handwashing facilities) 92

2 Potable running water 93

3 Soap or soap alternatives 93

4 Hand towels or dryers 94

Guide 3.2. Showering and Bathing 97

1 Why is regular washing important? 97

2 Why is workplace washing important? 97

3 Why is emergency washing important? 99

Guide 3.3. Laundering 101

Guide 3.4. Food hygiene 103

1 Keep clean 105

2 Separate raw and cooked foods 105

3 Cook thoroughly 105

4 Keep food in safe temperatures 105

5 Use safe water and raw materials 105

Guide 3.5. Menstrual hygiene management (MHM) 107

ACTION MANUAL

G3.1 Government Action Manual: Hygiene 109

E3.2 Employers' Action Manual: Hygiene 113

W3.3 Workers' Action Manual: Hygiene 122



ABBREVIATIONS

CKD	Chronic kidney disease
FAO	Food and Agriculture Organization
HealthWISE	Work Improvements in Health Services (ILO/WHO)
HIV/AIDS	Human immune deficiency virus / Acquired immunodeficiency syndrome
HRI	Heat-related illness
ILO	International Labour Office
IUF	International Union of Food Workers
OSH	Occupational safety and health
PPE	Personal protective equipment
SDGs	Sustainable Development Goals
UN	United Nations
UNICEF	United Nations Children's Fund
WASH	Water, sanitation and hygiene
WISE	Work Improvements in Small Enterprises
WARM	Work Adjustment for Recycling and Managing Waste
WHO	World Health Organization
WIND	Work Improvement in Neighbourhood Development
WISCON	Work Improvement in Small Construction Sites
WISH	Work Improvement for Safe Home
WWAP	World Water Assessment Programme





1. INTRODUCTION

In 2010, the UN General Assembly recognized access to safe water and sanitation as a human right. In 2015, all governments committed to achieve universal access by 2030 (SDG 6). The right to safe drinking water, sanitation and hygiene is fundamental to the realization of the right to health and well-being, including the right to healthy occupational and environmental conditions (International Covenant on Economic, Social and Cultural Rights). This includes the right to access to safe drinking water and adequate sanitation facilities (UN 2016). The lack of access to safe drinking water and sanitation also reduces the capacity of the rural poor to work their way out of poverty (ILO 2008 Report IV), and hinders gender equality.

Despite these universally recognized rights, there are almost 400,000 work-related deaths annually due to communicable diseases, and the main contributing and preventable factors are poor drinking water, sanitation and hygiene, and the related lack of knowledge (WWAP 2016). Poor WASH conditions are a frequent cause of both morbidity and mortality worldwide (Uddin *et al.*, 2016; Khanna and Das, 2015; Winter and Barchi, 2016). There is limited knowledge in middle- and low-income countries on WASH in non-household settings, such as workplaces and available scarce data show that WASH access is lower in workplace settings than in household settings (Cronk *et al.*, 2015). Also, the international community took note of the importance of sanitation only recently.

Population groups exposed to decent work deficits – in particular children, rural women, adolescent girls, people with disabilities, undocumented migrant workers, homeless and immunocompromised populations (e.g. people living with HIV/AIDS) – are the most affected and face the greatest health and safety risks from poor WASH conditions both at work and outside the workplace.

The following module provides a policy and international legal framework for the promotion of safe and healthy working conditions through access to WASH. Relevant ILO and academic literature on the links between access to WASH and the scope of WASH provisions in selected sectoral Conventions will be presented to illustrate their

importance and to provide a better understanding of the topic. This will set the stage for the following modules, that will address the skills that governments and social partners will require to promote or comply with international labour standards on OSH.

1.1. How to use WASH@Work

WASH@Work is a combined training and action tool designed to inform governments, employers, and workers on the needs for WASH at the workplace. The tool is designed to encourage all stakeholders to participate in making their workplace safe, healthy, and productive. The tool is made up of two central components:

Training Guides provide essential knowledge on access to WASH at the workplace and describe the reasons why WASH provisions are essential to worker health and well-being. Keeping the workplace hygienic and sanitary is everyone's responsibility! For this reason, the Training Guides are intended for governments, employers, and workers alike to promote WASH at work, in coordination and cooperation. After all, knowledge is power, and ensuring that all stakeholders are informed is the key to concerted action. Moreover, through consultation and information exchange between governments and social partners on key WASH at work issues, social dialogue can be enhanced towards safer workplaces, safer communities and more productive economies.

The Training Guides are divided into separate modules for:

- Module 1: Water
- Module 2: Sanitation
- Module 3: Hygiene

Action Manuals are provided at the end of each Training Guide module, and are separated based on the responsibilities of governments, employers, and workers. The Action Manuals provide checkpoints, and an explanation “why” a certain



action is needed; and “how” the action can be taken. The boxes under the “how” section provide actionable points that should be considered towards successfully fulfilling the respective checkpoint.

An integrated approach

The problems related to occupational illness due to lack of access to WASH have been well documented in the past. Now comes the time to accelerate the implementation of key principles that can reach the most vulnerable communities worldwide. Potential actions to address such needs will require coordinated efforts by governments and effective social dialogue between social partners at multiple levels. For this reason, WASH@ Work is designed to be a learning and action tool for *all* stakeholders to use in coordination. By highlighting the links between the responsibilities of governments, employers, and workers, the tool aims to promote a collaborative framework for action.

The tool also provides examples of good practices, reminders, references to other training materials, and web links. The information presented can be referenced by all stakeholder groups to enhance the tool’s use.

A ‘step by step’ approach to action for each stakeholder group

The checkpoints in the Action Manuals are followed by Checklists to guide each action. The aim of the Checklist is to help you better understand needs, gaps and concerns, and to decide on priorities for action. The checklists provide a first step for planning of workplace improvements in regards to WASH.

How to use the Checklists

The Checklist is a simple, but important tool for ensuring that all checkpoints have been considered. It can identify workplace WASH issues and gaps, and then can guide planning based on priority concerns. The steps for using the Checklist are provided below.

**STEP 1:
Engage the
checklist group**

Identify a small group of people that have experience in the topic, but who also fulfill different functions in order to have a variety of perspectives. You can also have individuals complete the checklist and then meet to discuss the results together. This participatory approach can provide different views of what are key concerns and priorities for action.

**STEP 2:
Prepare
materials**

Make enough copies of the checklist for each person. Make sure everyone has reviewed the Training Guides and Action Manuals to understand the Checklist questions. Prepare cameras to take pictures of concern areas, or to document good practices. Photographs can be important tools to share good practices and inspire action.

**STEP 3:
Define the issues
or workplace***

Decide on which areas of the workplace will be considered for a walk through the workplace. It will be more efficient to focus on separate work areas if you work in a large enterprise.

**STEP 4:
Conduct the walk
through***

Take time walking through the work area while considering each Checklist point. Take detailed notes and photographs as needed. Pose questions to people in the area to better understand potential concerns.



STEP 5:
Fill in the Checklist

Tick "YES" or "NO" based on your experiences in the walk through.

Ticking YES means that the action has been taken. However, remember that it could always be improved! Be mindful that conditions may also change over time.

Ticking NO means that the action has not been taken and needs attention. Action is needed to fulfill this point.

STEP 6:
Consider suggestions

Consider what you learned in the Training Guides and Action Manual to guide your ideas and suggestions for improvements or change. Write them down in the box provided.

STEP 7:
Decide on priorities

Think about the importance of the different Checklist points. Decide on what concerns are posing the greatest risk and that should therefore be considered as priorities for action. Tick the PRIORITY box for these concerns.

STEP 8:
Agree on order of priority

Note all the points in the Checklist where the PRIORITY Box was ticked. Together with your group, agree on an order of priority and discuss how action can be taken.

STEP 9:
Develop Action Plan

Discuss with your group how to efficiently address the order of priorities. Develop a timetable and assign responsibilities with achievable goals. Ensure that all group members understand the plan of action and set it into motion.

* Some Checklist points, particularly for governments, may not require a walk-through and should be adapted accordingly.



IMPORTANT NOTE: please adapt the checkpoints according to your situation – this is YOUR tool and it must be relevant to YOUR situation.



2. WASH IN THE WORKPLACE: THE DECENT WORK APPROACH

Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

The promotion of safe and healthy working conditions has been a fundamental objective of the International Labour Organization (ILO) since the Organization was founded in 1919. A significant body of international instruments and guidance documents has been developed by the ILO to assist governments and social partners in strengthening their capacities to prevent and manage workplace hazards and risks. In 2016, the International Labour Conference resolution on Decent Work in Global Supply Chains called on governments to implement measures to improve the occupational safety and health for all workers, including in global supply chains, while increasing productivity. Workers, in turn, must play an active role in understanding their own WASH needs and monitor their working environment.

Enhanced worker productivity is a central argument for WASH-related provisions in the workplace. The WHO (2012) estimates that investments in sanitation bring four-fold economic returns in increased health and productivity. For example, dehydration quickly reduces physical and mental ability, thus reducing productivity and increasing the risk of accidents. There is increasing evidence that even mild dehydration can play a role in various morbidities and good hydration has been shown to reduce the risk of various health risks (Manz 2007).

A meta-analysis of studies covering 27 African countries found that “increasing the access rate to drinking water significantly increases the growth rate of agricultural labor productivity” because of the better health of workers and less time they spend on fetching water. (Kiendrebeogo, 2012).

In Vietnam, some factories did better when they went beyond merely avoiding conditions associated with sweatshops and instead created an environmentally comfortable and trusting workplace, including water and restroom satisfaction. Profitability was 7.6% higher where workers expressed greater satisfaction with water, air quality, restrooms, canteens and health services provided in the factory, holding other factors constant (ILO 2015c, Brown *et al.* 2015). These measures help workers recover energy during long working days, increases productivity, and decreases fatigue, work-related illnesses, and absenteeism.

Returns in performance by the 300 factory workers of *Confection et Emballages* in Haiti largely compensated the modest cost of installing seven water coolers, because it significantly increased the level of attention and efficiency at work (Di Martino *et al.* 2003). The Russian-British Consulting Centre, in Russia, found that installing a commercial filter on the spigot in the kitchenette of its small office provided water at 10 per cent of the cost of bottled water (Wanjek 2005).

Many of the plenary discussions for ILO Conventions highlighted the importance of WASH-related provisions as a means to increase productivity by reducing vector-borne diseases: for example, for the Hygiene (Commerce and Offices) Convention, 1964 (No. 120), and the Safety and Health in Agriculture Convention, 2001 (No. 184).

Other factors support the promotion of access to WASH. For example, good facilities for managing menstrual hygiene support the health, dignity and inclusion of female employees (Sommer *et al.* 2016).



2.1. Risk assessment approaches

“Occupational hygiene is the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace, and which could impair the health and well-being of workers, also taking into account the possible impact on the surrounding communities and the general environment.” (Weber 2011) Through this definition, it is clear that sound OSH practices should be based on an understanding of workplace risks, and in turn, prevention should be seen the central strategy for protecting workers, as well as the wider community.

A key tool promoted by the ILO for managing OSH at a workplace is *risk assessment* using the *hierarchy of risk control measures*. The ILO Guidelines on OSH Management systems (2001) and the ILO Training Package on Workplace Risk Assessment and Management for Small and Medium-Sized Enterprises (2013) provide guidance on the essential control measures necessary to improve working conditions to better protect worker health and safety. A workplace safety and health risk assessment involves a careful examination of what has the potential for causing injury or ill health to workers.

The Hierarchy of Controls, an internationally established framework to prevent and control safety and health hazards by identifying effective

interventions promoted by the ILO, holds that the most effective intervention is complete elimination of the hazard. The hierarchy of control measures contains six risk control measures, in order of priority:

1. Elimination or substitution of hazards
2. Tools, equipment, technology and engineering
3. Safe work methods
4. Hygiene and welfare
5. Personal protective equipment
6. Health/medical surveillance

The Risk control measure of **Hygiene and Welfare** provides a distinct consideration for WASH in order to promote welfare in the workplace. In a risk assessment, stakeholders must evaluate and decide if their existing hygiene and welfare facilities prove sufficient to cope with the risks from the workplace hazards. Importantly, these measures are not aimed to only prevent hazards, but also reduce their effects, as well as promote worker well-being to increase productivity. The following table provides some examples in broad categories, which may assist in the process of tailoring training tools with WASH principles.



© UN Photo/Kibae Park



WASH hazard prevention/control method	Examples of interventions
Elimination	<ul style="list-style-type: none"> ▶ Incorporate safe, adequate, and dignified WASH access in worksite design ▶ Design safe WASH access for people with disabilities
Substitution	<ul style="list-style-type: none"> ▶ Eliminate/minimize the provision of nutrition-poor beverages and provide sources of safe drinking water
Engineering controls	<ul style="list-style-type: none"> ▶ Water supply piped to premises ▶ Various high- and/or low-tech water purification technologies and devices ▶ Provide portable drinking water stations, water coolers, or water fountains ▶ Provide hands-free and continuous hydration systems for outdoor workers who are exposed to heat ▶ Improve and upgrade sanitation facilities (e.g. improved engineering in the construction of latrines)
Administrative controls	<ul style="list-style-type: none"> ▶ Allocate rest breaks and arrange compensations not to discourage rest breaks ▶ Establish privacy rules/ mechanisms for bathrooms and toilets ▶ Provide hygiene awareness training and information for both supervisors and workers ▶ Institute housekeeping practices, including the cleaning and maintenance of sanitary facilities, cooking areas, welfare facilities, locker areas, and temporary worker housings.
Hygiene and Welfare	<ul style="list-style-type: none"> ▶ Provide washing and sanitary facilities ▶ Store contaminated work clothing and personal protective equipment (PPE) in an appropriate place and do not allow workers to take them home ▶ Provide laundering facilities to clean contaminated work clothing ▶ Provide clean water
PPE and protective clothing	<ul style="list-style-type: none"> ▶ Provide gloves, aprons, and other protective gear for improved hygiene ▶ Use separate clothes at work when there is an exposure transfer possibility between the workplace and the home

Considering safe and adequate WASH early at the workplace design stage is the most effective way to eliminate hazards. The design stage could plan WASH accessibility for people with physical disabilities, gender-specific sanitary facilities, privacy issues, and other (Asfaw *et al.*, 2016; MacLeod *et al.*, 2014). A WASH-related example for “substitution” is replacing sugar-sweetened soft drink like beverages with safe drinking water

(Davy *et al.*, 2014). “Engineering controls” are devices or equipment to prevent or control WASH hazards. “Administrative controls” refer to worksite policies and practices aimed at controlling WASH-related hazards and exposures, like cleaning and storing PPE and protective clothing provide a barrier between a worker and pesticides. WASH principles are particularly relevant for the proper maintenance of PPE, as well as for effective



decontamination after use to reduce the risk of hazardous exposures for workers, and for their families (in the form of “take-home exposures”). The ILO Code of Practice for Safety and Health in Agriculture (2011) promotes good housekeeping as a means to increase productivity by reducing lost time because of injuries and disease.

A WASH-focused hazard identification process during worksite walk-through inspections can usher measures like the provision of safe drinking water,

gender-specific toilets that can be used in privacy and dignity, hand-washing stations, sanitation facilities (e.g. showers, lockers for personal clothes), welfare facilities (kitchens, cantinas, rest areas), as well as general tidiness of the work environment. It can also help detect less obvious organizational factors, like worksite WASH policies and practices, rest-room breaks, work hours, and compensation mechanisms that may shorten rest breaks (e.g. piece rate vs. hourly wages).

3. INTERNATIONAL LABOUR STANDARDS AND CODES OF PRACTICE ON ACCESS TO WASH

A recent ILO publication explains international labour standards as follows:

International labour standards are legal instruments drawn up by the ILO's constituents (governments, employers and workers) setting out basic principles and rights at work. They are either Conventions, which are legally binding international treaties that may be ratified by member States, or Recommendations, which serve as non-binding guidelines. In many cases, a Convention lays down the basic principles to be implemented by ratifying countries, while a related Recommendation supplements the Convention by providing more detailed guidelines on how it could be applied. Recommendations can also be autonomous, i.e. not linked to any Convention.

Conventions and Recommendations are drawn up by representatives of governments, employers and workers and are adopted at the ILO's annual International Labour Conference. Once a standard is adopted, member States are required under the ILO Constitution to submit them to their competent authority (normally the parliament) for consideration. In the case of Conventions, this means consideration for ratification. If it is ratified, a Convention generally comes into force for that country one year after the date of ratification. Ratifying countries commit themselves to applying the Convention in national law and practice and to reporting on its application at regular intervals. Technical assistance is provided by the ILO if necessary. In addition, representation and

complaint procedures can be initiated against countries for violations of a Convention they have ratified.¹

The ILO's OSH Conventions contain provisions for access to safe drinking water, sanitation and hygiene. One of the first considerations for workers' access to adequate supplies of safe drinking water is in the Welfare Facilities Recommendation, 1956 (No. 102), which specifies guidelines for the establishment of canteens, mess rooms and other food and rest-related facilities. The facilities so provided should include at least “an adequate supply of wholesome drinking water.” Several sectoral Conventions adopted this phrase as a minimum requirement of adequate welfare and accommodation facilities, although they differ regarding the quality and location of water supply, underscoring the importance of easy access and reflecting the diversity of economic sectors. These measures should adjust to national laws or regulations.

The ILO's Occupational Safety and Health Convention, 1981 (No. 155) defines the term health, in relation to work, as “not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.” This definition is critical to provisions for the access to safe water, sanitation and hygiene, particularly due to the lack of clear distinction between working

¹ ILO 2014b: 15.

and living environment for workers in certain sectors, such as mining or agriculture.

The accompanying Recommendation (No. 164) provides more precise indications for sanitary facilities and the provision of drinking water. "As appropriate for different branches of economic activity and different types of work and taking into account the principle of giving priority to eliminating hazards at their source, measures should be taken", among them "sanitary installations, washing facilities, facilities for changing and storing clothes, supply of drinking water, and any other welfare facilities connected with occupational safety and health."

The Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) provides a general duty of member States to "promote continuous improvement of occupational safety and health to prevent occupational injuries, diseases and deaths, by the development, in consultation with the most representative organizations of employers and workers, of a national policy, national system

and national programme." Recommendation No. 197, which supplements it, advises member states to "take into account the instruments of the ILO relevant to the promotional framework for occupational safety and health, listed in the Annex to this Recommendation," when formulating and reviewing the national programme.

The Occupational Health Services Recommendation, 1985 (No. 171), which supplements the Occupational Health Services Convention, 1981 (No. 161), mandates occupational health services to "supervise sanitary installations and other facilities for the workers, such as drinking water, canteens and living accommodation, when provided by the employer" (Paragraph 8(b)). The Right to Organise and Collective Bargaining Convention, 1949 (No. 98), in turn, promotes the use of negotiation machinery to establish working conditions.

The drafting committee of the Occupational Safety and Health Convention, 1981 (No. 155) agreed that it would be necessary to include rights and duties of workers concerning the prevention and control of occupational hazards. For that reason, the Convention mandates arrangements for workers to cooperate in the fulfilment of the obligations placed on the employer. The corresponding Recommendation (No. 164) provides guidance aimed at ensuring that workers take care of their own safety and that of others, comply with instructions and procedures, use safety devices and protective equipment correctly, and report hazardous situations and accidents or injury to health.

A number of Conventions and Recommendations contain specific provisions to protect populations. For example, the Safety and Health in Mines Recommendation, 1995 (No. 183), states: "Due regard should be given to the possible impact of mining activity on the surrounding environment and on the safety of the public. In particular, this should include the control of subsidence, vibration, fly-rock, harmful contaminants in the water, air or soil, the safe and effective management of waste tips and the rehabilitation of mine sites."

Besides these instruments, the ILO adopts Codes of Practice, proposed by experts nominated by member States and by worker and employer organizations. The following are relevant to our study:





1. Safety and health in the construction of fixed offshore installations in the petroleum industry (1981)
2. Safety in the use of asbestos (1984)
3. Safety and health in coal mines (1986)
4. Radiation protection of workers (ionizing radiations) (1987)
5. Prevention of major industrial accidents (1991)
6. Safety and health in opencast mines (1991)
7. Safety and health in construction (1992)
8. Safety in the use of chemicals at work (1993)
9. ILO code of practice for Recording and notification of occupational accidents and diseases (1995)
10. Ambient factors in the workplace (2001)
11. Safety in the use of synthetic vitreous fibre insulation wools (2001)
12. ILO code of practice on HIV/AIDS and the world of work (2001)
13. Safety and health in the non-ferrous metals industries (2003)
14. Safety and Health in Ports (2005)
15. Safety and health in the iron and steel industry (2005)
16. Safety and health in underground coalmines (2006)
17. Safety and health in Agriculture (2011)

These Codes provide guidance to apply the corresponding Conventions and Recommendations, particularly in regards to maintaining the health of workers, and preventing – as far as is reasonably possible – water and sanitation-related diseases for all those engaged in each sector or working with hazardous substances.

For example, the Code of Practice on Safety and Health in Agriculture suggests that OSH policies should include arrangements to communicate with the authorities responsible for the provision of water. The code of practice on Ambient factors in the workplace (2001) also holds employers responsible for the safety and health of workers, and urges that workers participate in decisions on occupational safety and health. They include practical recommendations for those responsible for occupational safety and health in each area of activity.

Numerous member States in all regions have followed these recommendations, including WASH provisions in their constitutions, laws and regulations, and many collective agreements contain text that addresses WASH-related issues. In addition, the South American Common Market (Mercosur) Council proclaimed in 2001 the workers' right to water supply, PPEs and bathrooms in the workplace. (ILO 2006-2012)

This module will discuss the relevant Conventions listed in the Annex of Recommendation No. 197, which seek to improve working conditions in specific economic sectors and contains provisions to handle hazardous materials. The titled sub-sections that follow describe specific sectors, and make the case as to why WASH is an issue of importance for workers working in them. The table at the end of this module summarizes the relevant provisions of the instruments cited.

3.1. WASH in the rural economy

Equitable, reliable and universal access to water and sanitation remains elusive in many rural areas. Limited access to safe water is the cause of a long list of water-related diseases that hamper the productivity of community members (ILO 2015d). Legislation in many countries requires employers to provide basic amenities, including drinking water and sanitation facilities, to agricultural workers. In some countries, they should be provided to members of workers' families (ILO 2000a). As a result, Article 19 of Convention No. 184 establishes that "National laws and regulations or the competent authority shall prescribe, after consultation with the representative organizations of employers and workers concerned:



- a) the provision of adequate welfare facilities at no cost to the worker; and
- b) the minimum accommodation standards for workers who are required by the nature of the work to live temporarily or permanently in the undertaking.

The ILO's Portfolio of policy guidance notes (2015) illustrates the ILO's holistic approach to promoting decent work in the rural economy and brings together the broad range of instruments and tools developed over the past years. The goal of the policy guidance notes is to offer guidance to policymakers, the social partners and other key stakeholders on the development of rural policies, strategies and programmes that effectively address and prioritize employment and labour related issues.

3.1.1. Heat stress and dehydration in agriculture

Agricultural workers are exposed to various weather and environmental factors, such as high heat and humidity, which may increase their risk for adverse health effects. That is why the ILO's Rural Economy Initiative in Mali and Niger seeks to improve access to water, targeting small-scale farmers and producers.

Heat stress, heat stroke, heat exhaustion, fainting, heat cramps and heat rash may occur if appropriate welfare activities, rest areas and drinking water are not provided. The combined heat stress, physical exertion, and recurrent dehydration seem the most plausible origins of the chronic kidney disease (CKD) etiology. A CKD epidemic in Central America (Mesoamerican nephropathy) has killed over 20,000 people since 1990. Outdoor workers, in particularly sugarcane cutters, are the most affected (Laws *et al.*, 2016; Roncal-Jimenez *et al.*, 2016a; Roncal-Jimenez *et al.*, 2016b; Wesseling *et al.*, 2016). Proper rehydration with water and other interventions may reduce heat stress and reduce ergonomic hazards (Clark *et al.*, 2016). Soft drink beverages can worsen dehydration-associated kidney injuries (Garcia-Arroyo *et al.*, 2016).

In El Salvador, a mixed-method intervention study introduced continuous and hands-free hydration, mobile shaded rest areas, scheduled rest periods, ergonomically improved machetes, and efficiency

strategies for sixty sugarcane cutters, aimed to reduce heat stress and dehydration without decreasing productivity (Bodin *et al.* 2016). While daily production increased by 43 per cent, more than other cutting groups, water consumption among workers increased only 25 per cent and symptoms decreased. The ILO recommends that immediate improvements should be agreed on through group work, including welfare facilities (WASH among them) and work organization (ILO 2014a).

An ILO survey among Thailand-based fishers led to a similar conclusion, since over 10 per cent of fishers surveyed did not have adequate access to food and water rations, making health maintenance difficult. The ILO recommended that the Thai Government and social partners collaborate to improve the design of fishing boats to address concerns related to OSH accommodation and sanitation. (ILO 2013)



Employers may follow these cost-efficient and easy-to-implement examples from Vietnam:

- ▶ engage reputable drinking water companies;
- ▶ place drinking water stations away from dust, sunshine, rubbish, and toilets;
- ▶ ensure that workers have equal access to drinking water usage with no undue restrictions; and
- ▶ regularly clean water containers, replace old cup/bottles, and change water filters. (ILO 2009a)

3.1.2. Safety management in agriculture

WASH is an integral part of pesticide safety management. Failure to wash skin and clothing after working with pesticides increases the potential for pesticide penetration through the skin. The discussion towards the adoption of the Convention on safety and health in agriculture highlighted individual cases and epidemics caused by pesticide poisoning outside work. These were attributed to the contamination of foodstuffs, residues of pesticides in food, the presence of



© ILO/Deloché P

pesticides in water or food due to misuse of containers, and contamination of ground water with chemical wastes. The Drafting Committee noted that a lack of hygienic facilities during meals taken in the fields might result in the contamination of food by pesticide-contaminated hands and clothes.

Animal-borne diseases are often transmitted by contaminated water and other biological agents closely related to working conditions in agriculture. The European Union took this into consideration when including agriculture in its Directive on the protection of workers from risks related to exposure to biological agents at work (2000/54/EC). For example, unsanitary water supplies and inadequate sewage disposal contribute to freshwater bilharzia contamination, which may affect workers in the course of irrigation or while working in rice paddies.

3.1.3. Housing

Often, there are no sharp distinctions between living and working conditions in agriculture. There is a close link between housing for agricultural workers, worker well-being and productivity: good access to water is one of the key components of sustainable agriculture (ILO, FAO and the IUF 2007). Migrant farmworkers overwhelmingly reside in poor housing conditions, exposing them to

crowding, lack of privacy, toilet facilities that are not gender specific, and shared kitchens and food storage facilities. (Arcury *et al.*, 2015).

Housing improvements for plantation workers like drinking water supply and sanitation can improve welfare, reduce water-borne diseases and in turn improve worker productivity. ILO field research revealed that most accommodation in the plantations in Indonesia, Sri Lanka and Ghana is provided to permanent workers: increasing casualization means that workers in non-standard forms of employment, such as temporary or seasonal workers, have lower entitlements, protections and working and living conditions. (ILO 2015a) For that reason, article 86 of the Plantations Convention, 1958 (No.110) requires the establishment of minimum standards for plantation housing that cover water supply and sanitary facilities.

The “Action-oriented research on gender equality and the working and living conditions of garment factory workers in Cambodia” (ILO 2012) recommended that governments consult worker and employer organizations, women’s organizations, and national organizations, and that they develop programmes and partnerships to identify opportunities for improving the access to water and sanitation of rural migrant garment industry workers.



3.1.4. WASH in mining

Dehydration is a known health risk for miners in tropical regions of Australia and even in more temperate regions (Polkinghorne *et al.*, 2013). Also, certain occupational diseases for miners, such as ankylostomiasis (hookworm) may be the result of contaminated water, insufficient monitoring of the workers' health, exposure to workplace contaminants, inadequate national standards or the inability of the competent authority to enforce regulations (ILO 1994a). Migrant or transient miners may be forced to live in camps or housing that are exposed to toxic mine effluents and may

be without clean drinking water, basic sanitary facilities and sewage installations, or adequate food supplies and medical facilities.

When elaborating the Convention and Recommendation on safety and health in mining, the ILO identified sanitary working conditions as a means to maintain appropriate OSH practice, noting that miners experienced continued heavy loss of life due to problems of OSH associated with the hazardous working environment. The report specifically made reference to the importance of sanitary working conditions to maintain appropriate OSH practice.

Table 1. Relevant provisions of the ILO instruments for agriculture and mining

A. Agriculture
<p>1. Water</p> <p>Plantations Convention, No. 110: "The recruiter or employer shall furnish recruited workers with everything necessary for their welfare during the journey to the place of employment, including particularly, as local circumstances may require, adequate and suitable supplies of food, drinking water, fuel and cooking utensils, clothing and blankets."</p> <p>"The appropriate authorities shall, in consultation with the representatives of the employers' and workers' organisations concerned, where such exist, encourage the provision of adequate housing accommodation for plantation workers. The minimum standards and specifications of the accommodation to be provided (...) shall be laid down by the appropriate public authority. Such minimum standards shall include specifications concerning veranda space, cooking, washing, storage, water supply and sanitary facilities."</p> <p>Code of Practice, Agriculture:</p> <p><i>Employers</i> should provide water:</p> <ul style="list-style-type: none"> ▶ Placed in locations readily accessible to workers. ▶ In sufficient amounts to meet the needs of all workers . ▶ Taking into account the air temperature, humidity and the nature of the work performed. ▶ For physical work in hot climates, one litre or more per hour per worker may be required. ▶ Mobile drinking water dispensers that are closed and equipped with a tap, and makes the point that open water containers should not be used due to the risk of contamination. ▶ The location of potable water should be announced. ▶ Non-potable water should be marked to indicate it is unsafe. ▶ No alcoholic beverages and other performance-enhancing products on the worksite. <p><i>Workers</i> should not eat or drink in places that may be hazardous.</p>



2. Sanitation

Plantations Convention, No. 110: “When recruited workers have to make long journeys on foot to the place of employment the competent authority shall take all necessary measures to ensure that, where the extent of the movement of labour makes this necessary, rest camps or rest houses are provided at suitable points on main routes and are kept in proper sanitary condition and have the necessary facilities for medical attention.”

“Minimum standards and specifications of accommodation to be provided to plantation workers shall include specifications concerning sanitary facilities.”

Code of Practice, Agriculture:

Employers should provide workers with reasonable time to use sanitary toilets, which should be:

- ▶ In sufficient quantity and easily accessible.
- ▶ Separate for men and women to ensure privacy and locked from the inside, or separate use thereof.
- ▶ Maintained in good hygienic conditions and supplied with sanitary paper.

3. Hygiene

Plantations Convention, No. 110: Each Member for which Part II of the Convention “Engagement and recruitment of migrant workers” is in force undertakes to maintain, within its jurisdiction, appropriate medical services responsible for ensuring that migrants for employment on a plantation and members of their families enjoy adequate medical attention and good hygienic conditions at the time of departure, during the journey and on arrival in the territory of destination.

Safety and Health in Agriculture Convention, No. 184: “National laws and regulations shall ensure that risks such as those of infection, allergy or poisoning are prevented or kept to a minimum when biological agents are handled, and activities involving animals, livestock and stabling areas, comply with national or other recognized health and safety standards.”

Recommendation No. 192: Employers should take “preventive and protective measures for the use of chemicals and handling of chemical waste at the level of the undertaking.”

These measures shall cover, inter alia:

- ▶ the preparation, handling, application, storage and transportation of chemicals;
- ▶ agricultural activities leading to the dispersion of chemicals;
- ▶ the maintenance, repair and cleaning of equipment and containers for chemicals; and
- ▶ the disposal of empty containers and the treatment and disposal of chemical waste and obsolete chemicals.

Measures for the handling of biological agents giving rise to risks of infection, allergy or poisoning, and for the handling of animals should comprise the following:

- ▶ Provision of disinfectants and washing facilities, and the maintenance and cleaning of personal protective equipment and clothing;
- ▶ Safety measures for the handling, collection, storage and disposal of manure and waste;
- ▶ Safety measures for the handling and disposal of carcasses of infected animals, including the cleaning and disinfection of contaminated premises.



Code of Practice (2011):

Employers should inform workers of the importance of good hygiene practices to minimize communicable diseases, retention of urine and chemical residues. Workers should receive training on, inter alia:

- ▶ Cleaning and protecting open wounds,
- ▶ Appropriate food handling and preparation techniques,
- ▶ The use of PPE

Washing facilities should be:

- ▶ Conveniently accessible and related to the nature and degree of exposure including
- ▶ Hot and cold or warm running water,
- ▶ Soap or other cleaning materials and towels or other drying equipment that is in accordance with national law and regulations.
- ▶ Hand-washing facilities with an adequate supply of potable water, ideally warm, soap, and single-use towels or air blowers should be conveniently located near the toilets

Food preparation and consumption:

- ▶ Hygienic eating facilities
- ▶ The persons in charge of food services should be skilled in sanitation and food handling, should be licensed by a competent authority, and should be inspected regularly
- ▶ Food should be prepared, handled and stored in hygienic conditions, and when dispensed, should be free from spoilage and contamination
- ▶ Food service facilities should be located at a safe distance from areas where hazardous materials are stored or used
- ▶ Potable water should also be provided for washing of food and cooking utensils.

Employers should establish control strategies against exposure to agrochemicals:

- ▶ Engineering and administrative controls which outline appropriate sanitation practices for PPE;
- ▶ Sanitary facilities and conveniences for workplace and worker hygiene; and
- ▶ Reducing the potential for contamination of water sources and the general environment.
- ▶ Laundering, cleaning, disinfection and examination of chemical protective clothing or equipment which has been used and may be contaminated by chemicals hazardous to health.
- ▶ Protocols to ensure that other clothing used at the worksite is not contaminated.
- ▶ Effluent from water used to wash contaminated clothing should be managed to avoid contamination of water sources.
- ▶ Sewage disposal system should not endanger the health of workers or threaten contamination of water sources.

Employers should seek to reduce risks of pesticide contamination and exposure:

- ▶ Adequate washing facilities related to the nature and degree of exposure and the toxicity of the chemicals, to enable workers to meet a standard of personal to avoid the spread of hazardous chemicals.
- ▶ Such facilities should be conveniently accessible but situated so that they do not themselves become contaminated.
- ▶ Showers, face and eye washing facilities and safety showers with clean potable water for workers contaminated by chemical splash.



Employers should seek to eliminate zoonotic diseases, by providing:

- ▶ Safe water supplies for people and for animals,
- ▶ Means to properly dispose of human and animal waste,
- ▶ Work environment and labour camp sanitation, and
- ▶ Enforcement of regular hand washing.

To eliminate hazardous vectors of disease, employers should:

- ▶ Improve drainage of building areas;
- ▶ Cover the top of rainwater catchment basins;
- ▶ Ensure that irrigation systems are designed and operated to discourage the propagation of snails, among others
- ▶ Provide toilets that “discourage workers from defecating or urinating in open water”
- ▶ Provide rubber boots and rubberized hand gloves that prevent skin contact with contaminated or infested water.

To ensure proper decontamination, employers should:

- ▶ Provide suitable and sufficient PPE, having regard to the type of work and risks, and in consultation with workers and their representatives.
- ▶ Ensure that workers remove PPE and protective clothing before leaving the workplace
- ▶ Provide facilities to store or wash PPE or work clothing at no cost to the worker
- ▶ Clean and maintain respirators to ensure they work properly

B. Mining

1. Water

Recommendation No. 183:

- ▶ All miners should have access to water at no cost, above and below the surface of the mine as needed.
- ▶ Self-contained chambers to provide refuge for workers in the event of an emergency should include fresh water and food supplies.

Codes of practice on safety and health in the iron and steel industry (2005), in underground coalmines, and in non-ferrous metal industries (2003):

- ▶ Employers should provide water that is readily accessible to all workers, sufficient for hydration maintenance, with the proper electrolytes, where appropriate.
- ▶ The Code of Practice for OSH in non-ferrous metal industries does not propose adding electrolytes.

2. Sanitation

Convention No. 176: National laws and regulations shall specify, “where appropriate, an obligation to supply sufficient sanitary conveniences and facilities to wash, change and eat, and to maintain them in hygienic condition,” and designate the competent authority to “monitor and regulate the various aspects of safety and health in mines”.

Recommendation No. 183: Employers “should, where appropriate, provide and maintain at no cost to the worker...sufficient and suitable toilets, showers, wash-basins and changing facilities which are, where appropriate, gender-specific” (Paragraph 25(a)).

Codes of practice on safety and health (1) in coalmines (may also be applied to other types of mine), (2) **in underground coalmines**, and (3) **in opencast mines:**

- ▶ Mine operators should provide adequate toilet facilities above and below ground, for both men and women as is necessary, at each mine.
- ▶ Managers are responsible for maintaining these facilities in a clean and sanitary condition.



3. Hygiene

Convention No. 176: National laws and regulations shall specify, “where appropriate, an obligation to supply sufficient sanitary conveniences and facilities to wash, change and eat, and to maintain them in hygienic condition.”

Recommendation No.183

Where appropriate, employers should provide and maintain at no cost to the worker:

- ▶ Suitable protective equipment, clothing as necessary and other facilities defined by national laws or regulations, if adequate protection against risk of accident or injury to health including exposure to adverse conditions cannot be ensured by other means, for example self-contained rescue chambers and emergency showers and eye wash stations.
- ▶ Adequate facilities for the storage, laundering and drying of clothes and adequate and hygienic facilities for taking meals.

Codes of practice on safety and health (1) in underground coalmines and (2) in the iron and steel industries

Employers should provide adequate washing facilities that are:

- ▶ conveniently accessible but protected from contamination from the workplace
- ▶ suitable to the nature and degree of exposure

These should include:

- ▶ Hot and cold or warm running water
- ▶ Soap or other cleaning materials
- ▶ Towels or other appropriate drying arrangements

3.2. WASH in the urban economy

Workers in the urban economy may face risks for hazardous exposures, particularly due to contamination of water and lack of adequate hygiene facilities. Urban workers may suffer from a lack of access to safe water and sanitation, and this factor is a major environmental contributor to ill health in urban areas, leading to cholera, diarrhoeal diseases and other waterborne diseases. Moreover, lack of WASH provisions for urban workers may result in diseases that have a significant toll on productivity at work, number of workdays lost, as well as premature death. Specific findings of urban worker populations found that street traders reported health problems related to lack of access to personal hygiene including lack of access to toilets (ILO 2003).

Environmental protection, public health, OSH and productivity are clearly important determinants of poverty reduction in urban areas (ILO 2004, Cities at work). For example, interventions to promote change in WASH access among informal workers in Tanzania have included organizing

informal workplace clusters to have safe drinking water points and hygienic sanitary facilities, and to increase efficiency in waste collection (ILO 1996).

The non-stationary nature of construction involves constant changes in working and living conditions. Working outside, which means working in bad weather, in cold and heat, damp and wet, was also considered a specific aspect (ILO 1987).

After major complaints that industrial solvents made workers sick, Nike pressed for changes at Tae Kwang Vina, a Korean-owned garment company established in 1995 that provides around 900,000 pairs of sports shoes per month to Nike. The company decided to offer well-balanced meals to its 14,500 workers (85 per cent female) with consideration given to proper hygiene as well as to workers' opinions. (Wanjek 2005).



Table 2. Relevant provisions of the ILO instruments for the construction and the iron and steel industries

A. Construction

1. Water

Convention No. 167: Wholesome drinking water should be provided “at or within reasonable access” of every construction site.

Code of Practice:

Governments (competent authorities) should ensure that the necessary steps are taken to make any water to be used for drinking fit for human consumption, where approved water is not available. If it has to be transported to the worksite, the transport arrangements should be approved by the competent authority.

Employers should ensure that:

- ▶ Drinking water for common use is stored in closed containers from which the water should be dispensed through taps or cocks.
- ▶ The transport tanks, storage tanks and dispensing container are designed, used, cleaned and disinfected at suitable intervals in a manner approved by the competent authority.
- ▶ Water that is unfit to drink should be conspicuously indicated by notices prohibiting workers from drinking it.
- ▶ A supply of drinking water should never be connected to a supply of water that is unfit to drink.

2. Sanitation

Convention No. 167: Employers should provide separate sanitary and washing facilities, for men and women workers.

Code of Practice:

- ▶ The scale of provision of toilet or sanitary facilities, and the construction and installation of water flush toilets, privies, chemical closets, plumbing or other toilet fixtures should comply with the requirements of the competent authority.
- ▶ No toilet other than a water flush toilet should be installed in any building containing sleeping, eating or other living accommodation and should be adequately ventilated and not open directly into occupied rooms.

3. Hygiene

Code of Practice:

- ▶ Adequate washing facilities should be provided as near as practicable to toilet facilities.
- ▶ Washing facilities should not be used for any other purpose, kept clean and maintained.
- ▶ If workers are exposed to skin contamination, there should be a sufficient number of appropriate washing facilities.

B. Iron and steel industry (Code of Practice)

1. Hygiene

The drafters adopted the following provisions contained in the Code of Practice for Safety in the use of chemicals at work:

- ▶ Employers should prohibit eating, chewing, drinking or smoking in work areas in which adequate control of exposure to chemicals hazardous to health can only be achieved by wearing PPE, and in any other area where such chemicals are likely to be present.
- ▶ Workers should not eat, chew, drink or smoke in a work area which requires PPE.

Suitable facilities should be set aside for these activities in an uncontaminated area, conveniently accessible to the work area.



3.3. WASH in the service economy

The ILO adopted its first standards on WASH for commerce and office workers in 1963, drawing upon the experience acquired with respect to industrial problems. Although measures to provide a safe and hygienic working environment for shop and office employees had made considerable progress in the twentieth century, there was a tendency to take environmental conditions in shops and offices for granted and such measures had not been as widely embodied in legal regulations as in industrial workplaces. For example, building codes did not always take into account the needs of the workers who would occupy them. (ILO 1963, ILO 1951).

Sixty-three years later, the participants of the Tripartite Sectoral Meeting on Safety and Health in the Road Transport Sector (ILO 2015b) underscored the severe impact of long-haul travel

and lack of adequate bathroom access for road transport workers, and issued an urgent call for improving sanitation for these workers:

The lack of bathroom facilities can have negative consequences for all transport workers, particularly women. Ensuring sufficient facilities should be an integral part of the development and updating of road systems.

Tripartite constituents should . . . actively engage in workplace health promotion activities to support healthy behaviour in the workplace, to provide adequate access to sanitary facilities, to improve health outcomes and to prevent occupational health conditions (diseases).

Finally, the Labour Relations (Public Service) Convention, 1978 (No. 151) promotes the use of active consultations and negotiations in the establishment of working conditions, which the parties have used effectively to provide welfare facilities to public servants.

Table 3. Relevant provisions of the ILO Hygiene (Commerce and Offices) Convention

1. Water

Employers should provide a supply of wholesome drinking water, or "some other wholesome drink":

- ▶ Preferably running drinking water.
- ▶ If delivered through containers, these should be:
 - clean,
 - tightly closed,
 - fitted with a tap where appropriate,
 - clearly marked with the nature of the contents,
 - in enough quantity, and
 - provided by an officially approved source, or referred for approval by health authorities.
- ▶ A sufficient number of drinking vessels should be provided and there should be facilities for washing them with clean water.

2. Sanitation

Sufficient and suitable sanitary conveniences shall be provided and properly maintained.

3. Hygiene

Employers should ensure that:

- ▶ Cups should not be shared by a number of workers.
- ▶ Any distribution of water not fit for drinking should be so labelled at the points where it can be drawn off.
- ▶ There is no inter-connection, open or potential, between drinking water systems and systems of water not fit for drinking.
- ▶ Sufficient and suitable washing facilities are provided and properly maintained.



3.4. WASH in maritime and offshore activities

Structural changes in the maritime industries have reduced opportunities for seafarers to go ashore, prompting the ILO's constituents to call for welfare facilities and services for seafarers (ILO 2001b). In 2006, many Conventions related to these industries were consolidated, and the

resulting Convention included detailed Guidelines which address WASH. Additionally, shipbreaking, which concerns the dismantling of ships, and the sale or disposal of its components (95% of which is carried out in Turkey and four Asian countries), and the construction of fixed offshore installations in the petroleum industry have deserved attention because of their isolation.

Table 4. Relevant provisions for maritime and offshore activities

A. Maritime Labour Convention (Guidelines)

1. Water

- ▶ Laws and regulations or other measures should provide minimum standards for the quantity and quality of food and drinking water, and shall undertake educational activities to promote awareness and implementation of the standards.
- ▶ Flag states shall take into account the amount of seafarers on board and the duration of the trip.
- ▶ Employers should ensure that seafarers have access to enough good quality drinking water to cover the requirements of the ship adequately, provided under regulated hygienic conditions.

2. Sanitation

Sanitary facilities should guarantee cleanliness, safety, and privacy, including:

- ▶ Size and construction of toilets;
- ▶ Additional requirements for sanitary accommodation intended for the use of more than one person;
- ▶ Separate sanitary facilities for men and for women;
- ▶ A minimum of one toilet, conveniently located, for every six persons or less who do not have personal facilities;
- ▶ In infirmaries, or "hospital accommodation," sanitary facilities should be used exclusively by the occupants of the hospital accommodation, either as part of the accommodation or in close proximity.
- ▶ Exceptions may be granted by the competent authority or through consultation with shipowners' and seafarers' organizations concerned.

3. Hygiene

- ▶ Minimum elements included in the laundry facilities;
- ▶ Minimum size and construction of washbasins and tub baths;
- ▶ A minimum of one wash basin and one tub or shower or both, conveniently located, for every six persons or less who do not have personal facilities;
- ▶ A washbasin with hot and cold running fresh water, except where such a washbasin is situated in the private bathroom provided.
- ▶ Exceptions may be granted by the competent authority or through consultation with shipowners' and seafarers' organizations concerned.



B. Shipbreaking (Guidelines on safety and health in shipbreaking for Asian countries and Turkey, 2004)

1. Water

- ▶ Wholesome drinking water should be provided “at or within reasonable access” of every shipbreaking facility.
- ▶ “Water that is unfit to drink should be conspicuously indicated by notices prohibiting workers from drinking it.”

2. Sanitation

Employers should provide sanitary facilities at or within reasonable access of every shipbreaking location or premises, which:

- ▶ Comply with the requirements of the competent authority regarding their scale, installation and construction, and
- ▶ Are conveniently accessible but situated so that they are not exposed to contamination from the workplace.

3. Hygiene

- ▶ Workers should be able to meet a standard of personal hygiene consistent with the adequate control of exposure and the need to avoid the spread of materials hazardous to health.
- ▶ Employers should provide:
 - washing facilities or showers at or within reasonable access of every shipbreaking location or premises, which comply with the requirements of the competent authority regarding their scale, installation and construction.
 - shelters with facilities for washing, taking meals and for drying and storing clothing.
- ▶ Transport tanks, storage tanks and dispensing containers should be designed, used, cleaned and disinfected at suitable intervals in a manner approved by the competent authority.
- ▶ No eating, chewing, drinking or smoking should be allowed in work areas in which adequate control of exposure can only be achieved by workers wearing PPE to prevent exposure to materials hazardous to health and in any other area where such materials are likely to be present. In these cases, suitable facilities should be set aside for these activities to be carried out in an uncontaminated area, which should be conveniently accessible from the work area.

C. Dock work

1. Water

Code of Practice (Ports, under review)

The Employer should provide an adequate supply of cool and wholesome drinking water, readily accessible from a source approved by the competent health authority.

- ▶ Drinking water outlets should be protected from damage and dirt, and clearly identified as such.
- ▶ Where practical, hygienic drinking fountains should be provided, and the use of common drinking cups should be prohibited.
- ▶ If not possible to provide a piped supply of drinking water, drinking water should be provided in sealed bottles or in suitable closed containers clearly marked “Drinking water”, properly maintained and replenished as necessary.
- ▶ Drinking water should not be contained in barrels, pails, tanks or other containers from which the water has to be dipped, whether they are fitted with covers or not.



2. Sanitation and hygiene

Convention No. 152:

The Employer should provide sanitary and washing facilities at each dock that are:

- ▶ sufficient and adequate, suitable and properly maintained
- ▶ within a reasonable distance of the workplace, wherever practicable, and
- ▶ in accordance with national laws or regulations or national practice.

Please refer to the Code of Practice (Ports, under review) for further details on number and characteristics of toilets.

D. Construction of fixed offshore installations in the petroleum industry (Code of practice, 1981)

1. Water

- ▶ Employers should provide and maintain drinking water for all persons, which should be conveniently accessible and clearly identified.
- ▶ Stored drinking water for common use should be stored only in closed containers from which the water should be dispensed through taps or cocks.

If drinking water from an approved public supply has to be transported to the site of the offshore construction operations, the transport arrangements should be approved by the competent health authority.

2. Sanitation

- ▶ Employers should provide a water closet (not being a urinal) for every eight persons.

3. Hygiene

Employers should provide:

- ▶ At least one bath or shower together with a supply of running cold or hot and cold water, as appropriate, for every eight persons.
- ▶ At least one wash basin with hot and cold running water for every six persons.
- ▶ The washing facilities should not be used for any other purpose and include adequate means of removing waste water; suitable non-irritating soap in sufficient quantity; and adequate drying facilities.
- ▶ A separate room with adequate and suitable machines for the washing of clothing together with adequate drying facilities, and sufficient receptacles for the disposal of garbage and other waste.
- ▶ Waste should be incinerated, or otherwise harmlessly disposed of at suitable intervals.



3.5. WASH regarding the working environment

The working environment can contain various factors that pose a health and safety risk for workers, such as the ambient environment (e.g., temperature and humidity), or the use of hazardous

materials (e.g., asbestos or chemicals). Exposure to hazardous materials was a concern for the ILO as early as 1921, when the White Lead (Painting) Convention (No. 13) was adopted. Since then, one Convention and several Codes of Practice have included hygiene measures, and one Code of Practice proposed steps to ensure hydration when working in hot or cold environments.

Table 5. Relevant provisions of the ILO Conventions regarding hazardous materials and temperatures

A. Ambient factors in the workplace (Code of practice)

1. Water

For hydration maintenance in hot environments, employers should make water at low salt concentration or dilute flavoured drinks readily available to workers, and should encourage them to drink at least hourly, by providing a close source or arranging for drinks to be brought to the workers.

- ▶ Drinks at 15 to 20 °C are preferable to iced drinks.
- ▶ No alcohol, caffeine, carbonated drinks or drinks with a high salt or sugar content
- ▶ No drinking fountains, because they are too difficult to drink from in sufficient volume.
- ▶ Personnel providing occupational health services should supervise sanitary installations, drinking-water supply, canteens and living accommodations.

In cold environments, employers should also:

- ▶ make water or dilute flavoured drinks readily available to workers, and
- ▶ encourage them to drink, by providing a close source or arranging for drinks to be brought to the workers, particularly when the environment is also dry.

B. Use of Chemicals

1. Hygiene

Chemicals Convention, 1990 (No. 170): Employers should take Operational control measures and provide personal protective equipment.

Code of Practice:

Employers should provide:

- ▶ Washing facilities-
 - adjusted to the nature and degree of exposure,
 - with a standard of personal hygiene consistent with the adequate control of exposure and the need to avoid the spread of chemicals hazardous to health, and
 - conveniently accessible but situated so they do not become contaminated from the workplace.
- ▶ Clothing accommodation-
 - when protective clothing is used or
 - when there is a risk of the contamination of outdoor clothing by hazardous chemicals.
- ▶ Changing facilities situated and designed to prevent the spread of contamination from protective clothing to personal clothing and from one facility to another.



C. Synthetic vitreous fibre insulation wools (glass wool, rock wool, slag wool) (Code of Practice)

1. Hygiene

Employers should:

- ▶ Provide smoke-free work and storage areas
- ▶ Keep other airborne contaminants to a minimum
- ▶ Provide washing and changing facilities with-
 - showers where appropriate
 - sufficient time for the workers to use them for personal hygiene during the working period, after working with insulation wools.

Workers should:

- ▶ Wear loose-fitting, comfortable, long-sleeved clothing, standard-duty gloves, and a cap when handling and removing insulation wools;
- ▶ Wear clothes that minimize general heat stress and discomfort, wherever practicable;
- ▶ Change contaminated clothing as necessary, and not wear it outside the workplace.

D. Asbestos (Code of Practice)

1. Hygiene

Employers should provide:

- ▶ Suitable protective clothing and respiratory equipment for workers occupied in the collection, transport or disposal of asbestos waste who may be at risk of exposure to airborne asbestos.
- ▶ Vacuum cleaning (or an alternative dustless method) of vehicles and reusable receptacles and covers that have been in contact with asbestos waste.
- ▶ Protective clothing, shower facilities, and storage for clean and contaminated clothing;
- ▶ Collecting and cleaning or disposing of contaminated clothing.
- ▶ A decontamination unit that is-
 - adjacent or as close as is reasonably practicable to the work site,
 - where contaminated clothing and footwear can be stored and vacuum-dusted or hosed down, and
 - with exhaust ventilation that creates negative pressure.
- ▶ Careful instruction for all workers on maintaining workplace cleanliness and personal hygiene and on adhering to decontamination procedure.
- ▶ A designated competent supervisor who will ensure:
 - Compliance with all dust control procedures
 - The air sampling necessary to ensure that airborne asbestos fibre levels outside the work site are below the prescribed exposure limits.



E. Radiation (ionising radiations) (Code of Practice)

1. Hygiene

Employers should inform workers about:

- ▶ The nature and sources of potential health risks which could result from the handling or use of radiation sources;
- ▶ The criteria and principles of radiation protection and the control measures to be taken appropriate to their work;
- ▶ Safe working methods and techniques to which they should adhere;
- ▶ The proper use, operation and care of personal monitoring and protective devices;
- ▶ Personal hygiene measures to be followed to limit the intake of radioactive substances; and
- ▶ Local radiation protection rules and procedures, including appropriate first-aid measures.

Workers must observe healthy personal hygiene practices whenever work involves exposure to unsealed sources of radioactive materials, such as the regular use of clean work clothes and showering at the close of work, because these practices help to minimize the intake of radioactive materials.



4. CONCLUSION

As the preceding pages show, WASH is an integral element in the measures to preserve the life and health of workers under international labour standards and codes of practice. Upon careful consideration of the priorities of each industry, the drafters emphasized particular measures to ensure the welfare and productivity of workers.

These standards outline the expectations of the international community from governments, employers and workers to ensure that work is carried out in a sustainable manner by allowing

workers to perform well during their entire working life, and that workers continue being healthy after retiring from the workforce. These instruments also provide a common platform for employers to protect the environment and populations surrounding workplaces.

This module provides the background for the following training materials, which seek to provide basic skills to further these goals. Accordingly, the preceding information should be kept in mind when reading the remaining modules.



REFERENCES

- ▷ Asfaw, B.; Azage, M.; and Gebregergs, G. B. 2016. "Latrine access and utilization among people with limited mobility: A cross sectional study", in *Arch Public Health*, Vol. 74, p. 9.
- ▷ Bodin, T.; Garcia-Trabanino, R.; Weiss, I.; Jarquin, E.; Glaser, J.; Jakobsson, K.; Lucas, R. A.; Wesseling, C.; Hogstedt, C.; Wegman, D. H.; and Group, W. E. P. W. 2016. "Intervention to reduce heat stress and improve efficiency among sugarcane workers in El Salvador: Phase 1", in *Occup Environ Med*, Vol. 73, No. 6, pp.409-16.
- ▷ Brown, D.; Domat, G.; Veeraragoo, S.; Dehejia, R.; and Robertson, R. 2015. Are sweatshops profit-maximizing? : Answer: No. Evidence from Better Work Vietnam, Better Work discussion paper No. 17 (Geneva: ILO).
- ▷ Clark, W. F.; Sontrop, J. M.; Huang, S. H.; Moist, L.; Bouby, N.; and Bankir, L. 2016. "Hydration and Chronic Kidney Disease Progression: A Critical Review of the Evidence", in *Am J Nephrol*, Vol. 43, No. 4), pp.281-92.
- ▷ Cronk, R.; Slaymaker, T.; and Bartram, J. 2015. "Monitoring drinking water, sanitation, and hygiene in non-household settings: Priorities for policy and practice", in *Int J Hyg Environ Health*, Vol. 218, No. 8), pp.694-703.
- ▷ Davy, B. M.; You, W.; Almeida, F.; Wall, S.; Harden, S.; Comber, D. L. and Estabrooks, P. A. 2014. "Impact of individual and worksite environmental factors on water and sugar-sweetened beverage consumption among overweight employees", in *Prev Chronic Dis*, Vol. 11, No., pp.E71.
- ▷ Di Martino, V.; Filippi, Soraya; Claude Loiselle, 2003. *Company cases and cross-company initiatives: Working conditions improvement in Haiti* (Geneva: ILO)
- ▷ Garcia-Arroyo, F. E.; Cristobal, M.; Arellano-Buendia, A. S.; Osorio, H.; Tapia, E.; Soto, V.; Madero, M.; Lanaspá, M. A.; Roncal-Jimenez, C.; Bankir, L.; Johnson, R. J. and Sanchez-Lozada, L. G. 2016. "Rehydration with soft drink-like beverages exacerbates dehydration and worsens dehydration-associated renal injury", in *Am J Physiol Regul Integr Comp Physiol*, Vol. 311, No. 1, pp.R57-65.
- ▷ ILO. 1951. *Hygiene in Shops and Offices, Report II, Advisory Committee on Salaried Employees and Professional Workers, Second Session, 1952* (Geneva: ILO).
- ▷ _____. 1963. *Hygiene in shops and offices. Report VI (1), International Labour Conference, 47th Session* (Geneva: ILO).
- ▷ _____. 1987. *Safety and Health in Construction, Discussion in plenary. 73rd International Labour Conference* (Geneva: ILO).
- ▷ _____. 1994a, 1994b. *Safety and health in mines. Reports V (1) and V (2), International Labour Conference 81st session* (Geneva: ILO).
- ▷ _____. 1996. *Promoting Productivity and Social Protection in the Urban Informal Sector: The Interdepartmental Project on the Urban Informal Sector (1994/95). Working Paper IDP INF/WP-6* (Geneva: ILO).
- ▷ _____. 2000a. *Safety and health in agriculture. Report VI (1), International Labour Conference, 88th Session* (Geneva: ILO).



- ▷ _____. 2000b. Safety and Health in Agriculture: report of the Committee on Safety and Health in Agriculture. Provisional Record 24. International Labour Conference 88th session (Geneva: ILO).
- ▷ _____. 2001a. ILO Guidelines on OSH Management systems (Geneva: ILO)
- ▷ _____. 2001b. Report of the 29th Session of the Joint Maritime Commission (Geneva: ILO).
- ▷ _____. 2003. The Health of Workers in Selected Sectors of the Urban Economy: Challenges and Perspectives. Working Paper 288. Geneva: ILO, 2013.
- ▷ _____. 2006-2012. OSH Country profiles. Available at:
.
- ▷ _____. 2008. Promotion of rural employment for poverty reduction, Report IV. International Labour Conference, 97th Session (Geneva: ILO).
- ▷ _____. 2009a. "BetterWork, Good Practices: Apparel-- Better working conditions, better business".
- ▷ _____. 2009b. General Survey concerning the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Safety and Health Recommendation, 1981 (No. 164), and the Protocol of 2002 to the Occupational Safety and Health Convention, 1981, Report III (Part 1B), International Labour Conference 98th Session (Geneva: ILO).
- ▷ _____. 2013a. Employment practices and working conditions in Thailand's fishing sector. Bangkok: ILO
- ▷ _____. 2013b. "Training Package on Workplace Risk Assessment and Management for Small and Medium-Sized Enterprises". (Geneva: ILO).
- ▷ _____. 2014a. Ergonomic checkpoints in agriculture: Practical and easy-to-implement solutions for improving safety, health and working conditions in agriculture (Geneva: ILO)
- ▷ _____. 2014b. The rules of the Game: a brief introduction to international labour standards, 3rd Ed. (Geneva: ILO).
- ▷ _____. 2015a: Decent work in oil palm and tea plantations: Surveys in Indonesia, Sri Lanka and Ghana (unpublished).
- ▷ _____. 2015b. Conclusions of the Tripartite Sectoral Meeting on Safety and Health in the Road Transport Sector (Geneva: ILO).
- ▷ _____. 2015c: Working Conditions, Productivity and Profitability Evidence from Better Work Vietnam.
- ▷ _____. 2015d. "Providing access to quality services in the rural economy to promote growth and social development" in *Portfolio of Policy Guidance Notes on the Promotion of Decent Work in the Rural Economy* (Geneva).
- ▷ ILO, FAO, and IUF. 2007. "Agricultural Workers and Their Contribution to Sustainable Agriculture and Rural Development" (Geneva: ILO).
- ▷ Kiendrebeogo, Y. 2012. Access to Improved Water Sources and Rural Productivity: Analytical Framework and Cross-country Evidence, *African Development Review*, Vol. 24, No. 2, 2012, 153–166.



- ▷ Laws, R. L.; Brooks, D. R.; Amador, J. J.; Weiner, D. E.; Kaufman, J. S.; Ramirez-Rubio, O.; Riefkohl, A.; Scammell, M. K.; Lopez-Pilarte, D.; Sanchez, J. M.; Parikh, C. R. and McClean, M. D. 2016. "Biomarkers of Kidney Injury Among Nicaraguan Sugarcane Workers", in *Am J Kidney Dis*, Vol. 67, No. 2), pp.209-17.
- ▷ Macleod, M.; Pann, M.; Cantwell, R. and Moore, S. 2014. "Issues in access to safe drinking water and basic hygiene for persons with physical disabilities in rural Cambodia", in *J Water Health*, Vol. 12, No. 4), pp.885-95.
- ▷ Manz, F. 2007. "Hydration and disease", in *J Am Coll Nutr*, Vol. 26, No. 5 Suppl), pp.535S-541S.
- ▷ Polkinghorne, B. G.; Gopaldasani, V.; Furber, S.; Davies, B. and Flood, V. M. 2013. "Hydration status of underground miners in a temperate Australian region", in *BMC Public Health*, Vol. 13, No., pp.426.
- ▷ Roncal-Jiménez, C.; Garcia-Trabanino, R.; Barregard, L.; Lanaspa, M. A.; Wesseling, C.; Harra, T.; Aragon, A.; Grases, F.; Jarquin, E. R.; Gonzalez, M. A.; Weiss, I.; Glaser, J.; Sanchez-Lozada, L. G. and Johnson, R. J. 2016a. "Heat Stress Nephropathy From Exercise-Induced Uric Acid Crystalluria: A Perspective on Mesoamerican Nephropathy", in *Am J Kidney Dis*, Vol. 67, No. 1), pp.20-30.
- ▷ Roncal-Jiménez, C. A.; Garcia-Trabanino, R.; Wesseling, C. and Johnson, R. J. 2016b. "Mesoamerican Nephropathy or Global Warming Nephropathy?", in *Blood Purif*, Vol. 41, No. 1-3), pp.135-8.
- ▷ Sommer, M.; Chandraratna, S.; Cavill, S.; Mahon, T.; and Phillips-Howard, P. 2016. "Managing menstruation in the workplace: an overlooked issue in low- and middle income countries", in *International Journal for Equity in Health* Vol. 15, pp. 86-90.
- ▷ Uddin, S. M.; Walters, V.; Gaillard, J. C.; Hridi, S. M. and Mcsherry, A. 2016. "Water, sanitation and hygiene for homeless people", in *J Water Health*, Vol. 14, No. 1, pp.47-51.
- ▷ United Nations (UN). 2016. General comment No. 23 (2016) on the right to just and favourable conditions of work (article 7 of the International Covenant on Economic, Social and Cultural Rights) (Geneva: UN).
- ▷ Wanjek, C. 2005. Food at work: Workplace solutions for malnutrition, obesity and chronic diseases. Geneva: ILO.
- ▷ Weber, A. 2011. "Occupational Hygiene: Goals, Definitions and General Information", ILO Encyclopaedia,
- ▷ Wesseling, C.; Aragon, A.; Gonzalez, M.; Weiss, I.; Glaser, J.; Bobadilla, N. A.; Roncal-Jimenez, C.; Correa-Rotter, R.; Johnson, R. J. and Barregard, L. 2016. "Kidney function in sugarcane cutters in Nicaragua - A longitudinal study of workers at risk of Mesoamerican nephropathy", in *Environ Res*, Vol. 147, No., pp.125-32.
- ▷ World Health Organization (WHO). 2012. "Accelerating work to overcome the global impact of neglected tropical diseases – A roadmap for implementation". (Geneva: World Health Organization).
- ▷ World Water Assessment Programme (WWAP). 2016. The United Nations World Water Development Report: Water and Jobs (Paris: UNESCO).



MODULE 1

WATER

Module One



© UN Photo/McKulka T.

MODULE 1: WATER

What is safe water at the workplace?

- ❑ Water at the workplace refers to the ability to access safe water for drinking, personal and workplace hygiene, within a reasonable distance from the working task or the worksite.
- ❑ Safe water at the workplace should be seen holistically, as an essential element for maintaining OSH through water drainage, vector control, and management of water-related risks.
- ❑ Access to safe water also encompasses interventions that reduce human exposure to contaminated water by providing mechanisms to promote hygiene and sanitation. It involves both behaviors and facilities, which work together to form a safe and healthy workplace.

Contents of this module

This module presents the importance of access to safe water and the provisions that are necessary to maintain a safe and healthy working environment. The aim of the Training Guide is to inform all stakeholders on:

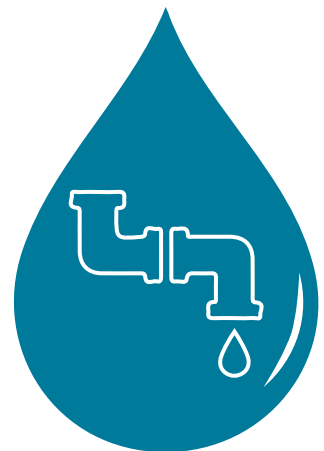
Guide 1.1. **Safe drinking** **water**



Guide 1.2. **Safe water** **for personal and** **workplace hygiene**



Guide 1.3. **Drainage,** **vector control** **and water-** **related risks**



GUIDE 1.1. SAFE DRINKING WATER

Water is essential for the survival of all human beings. Without safe water, people simply cannot stay alive, or thrive in a healthy environment. The safety of drinking water is a growing concern in many countries, as water sources are increasingly under threat from microbial or chemical contamination, which impacts individual health, as well as the economic, environmental and social development of communities and nations. In many workplace and living environments, diseases can be spread by poor personal, food and environmental hygiene due to insufficient water and by the consumption of contaminated water.



Key facts on drinking water

- ▶ 663 million people are still without access to clean drinking water.
- ▶ 8 out of 10 people without access to clean water live in rural areas.
- ▶ 159 million people use untreated water from lakes and rivers - the most unsafe water source there is.
- ▶ At least 1.8 billion people use a drinking-water source contaminated with faeces.
- ▶ Contaminated drinking water is estimated to cause 502,000 diarrhoeal deaths each year.

Source: World Health Organization (2015). *Drinking water, Fact sheet N°391*.

What does safe drinking water mean?

Safe drinking water, also known as “potable water” or “improved drinking water”, is water that is *of sufficient quality to be used for drinking (as well as for cooking and personal and domestic hygiene) without causing risk to health*. Unfortunately, a lot of water that is intended for drinking is not always safe. The three main threats to drinking water are microbial, chemical, and radiological.

1. Microbial threats

Water may be contaminated with bacteria, viruses or parasites, which are linked to the transmission of numerous diseases.

- ▶ The greatest risk to health from germs in water is due to contamination with human and animal excreta.
- ▶ If there is an infection in a person, the microbe can multiply and spread in human excreta and infect others.
- ▶ Certain microbes can also multiply in food, drinks and warm water systems, increasing the risk of contamination and infections.



Waterborne diseases/disease agents (examples, not limited to):

Bacterial

- ▶ Dysentery
- ▶ Cholera
- ▶ Typhoid Fever
- ▶ *Escherichia coli*

Viral

- ▶ Hepatitis E
- ▶ Hepatitis A
- ▶ Polio

Parasitic

- ▶ *Cryptosporidium*
- ▶ *Giardia*
- ▶ *Toxoplasma gondii*

Source: World Health Organization (2015). *Waterborne diseases, Fact sheet N391*.

2. Chemical threats

In addition to germs, water can also contain certain chemicals. Some chemicals are harmless, but others can cause negative health effects.

- ▶ Most chemicals in drinking water are a concern after long exposure – usually of years rather than months. That is because the health effects may be cumulative, and slowly get worse over time.
- ▶ Chemicals can get into water from different sources. They include:
 - Naturally occurring sources (from rocks and soil)
 - Industrial or human sources (by-products of manufacturing or chemicals from unsecured mine tailings)
 - Agricultural activities (pesticides and fertilizers)
 - Materials in contact with drinking-water (disinfectants and chemicals in water piping)



Chemical contaminants in water (examples)

Naturally occurring

- ▶ Arsenic
- ▶ Fluoride
- ▶ Iron

Industrial sources and human dwellings

- ▶ Beryllium
- ▶ Cyanide
- ▶ Mercury

Agricultural activities

- ▶ Ammonia
- ▶ Endosulfan
- ▶ Nitrate

Water treatment or materials in contact with drinking-water

- ▶ Asbestos
- ▶ Chlorine
- ▶ Lead

Source: World Health Organization (2011).
Guidelines for Drinking-water Quality.

3. Radiological threats

Drinking water may also contain radioactive substances that may present a risk to human health. Radiological risks are typically less hazardous compared to the risks from microbes and chemicals.



- ▶ Except in extreme circumstances, the radiation dose in drinking water is much lower than that received from other sources of radiation.
- ▶ Testing of nuclear weapons, routine discharges from industrial and medical facilities and accidents have added human-made radioactivity to drinking waters.

What sources provide safe drinking water?

While there are many sources for water, only improved drinking water sources should be trusted for drinking or cooking. An “improved” drinking water source is one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter.



Table 1.1.1. Improved and unimproved sources of drinking water.

	Water source	Definition
IMPROVED DRINKING WATER 	Piped water into dwelling	A water service pipe connected with in-house plumbing to one or more taps (e.g. kitchen and bathroom). Also called a household connection.
	Piped water to a yard or plot	A piped water connection to a tap placed in the yard or plot outside the house. Also called a yard connection.
	Public tap or standpipe	A public water point from which people can collect water. It may have one or more taps made of brickwork or concrete. Also known as a public fountain or public tap.
	Tubewell or borehole	A deep hole that has been bored or drilled, in order to reach groundwater. Constructed with casing, or pipes, to prevent them from caving in and protects the water source from infiltration by run-off water. Water is pumped up, which may be powered by human, animal, wind, electric, diesel or solar means.
	Protected dug well	A well that is protected from runoff water by a well lining or casing that is raised above ground level and a platform that diverts spilled water away from the well. It is also covered, so that animals and waste cannot fall in.
	Protected spring	A natural spring that is protected from runoff, bird droppings and animals by a "spring box", which is made of brick or concrete and is built around the spring so that water flows out of the box and into a pipe or catchment, without being exposed to outside pollution.
	Rain water	Rain that is collected from surfaces (by roof or ground catchment) and stored until used.
UNIMPROVED SANITATION 	Unprotected spring	A spring that is subject to runoff, bird droppings, or the entry of animals. Unprotected springs typically do not have a "spring box".
	Unprotected dug well	A dug well for which one of the following is true: 1) not protected from runoff water; or 2) not protected from bird droppings and animals. If at least one is true, the well is considered to be unprotected.
	Small tank or drum of water delivered	Water sold by a provider who transports water into a community using donkey carts, motorized vehicles and other means.
	Tanker truck	Water that is trucked into a community and sold from a water truck.
	Surface water	When water is located above ground. Includes rivers, dams, lakes, ponds, streams, canals, and irrigation channels.

Source: WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation. Improved and unimproved water sources and sanitation facilities. 2015.



Bottled water is also a source of drinking water. However, bottled water is considered to be improved only when the household or workplace uses drinking water from an improved source for cooking and personal hygiene. Where this information is not available, bottled water is classified on a case-by-case basis.



Reminder: Work in animal operations and slaughtering

- ▶ Work activities with animals may involve exposures to animal wastes, with risks of exposures to bacteria, and groundwater contamination. One infection of significant concern from animal excreta is *Escherichia coli* (E.Coli).
- ▶ Infections in workers, particularly young workers and children, may occur as a result of contamination of ground water, including wells, with E. coli. Infection from drinking contaminated water can result in severe gastrointestinal diseases such as diarrhoea and severe kidney and other problems and may result in death.
- ▶ Work activities involving animals should take into consideration the possibility of groundwater contamination and take particular caution.

Source: For more information, see: Safety and health in agriculture: an ILO code of practice (2010).

What are worker requirements for drinking water?

Water is a basic need of the human body and is critical to human life. The human body requires a minimum amount of water in order to be able to be able to function properly. Without a certain amount, mild and then severe dehydration occurs.

- **Mild dehydration** results in negative health effects, like loss of alertness and concentration, headaches and confusion. Mild dehydration can be reversed by increased fluid intake and may be enhanced through the use of salt replacement solutions.

- **Severe dehydration** can lead to kidney and urinary disorders, and can be fatal. Severe dehydration requires medical attention.

The definition of the ‘absolute minimum’ quantity of drinking water to maintain hydration is difficult to establish. Minimum requirements for worker hydration will be different for each worker, and will depend on many different factors, including:

- ▶ Worker characteristics, such as: age, body-weight index, physical condition, degree of acclimatization, metabolism, presence of health condition, consumption of drugs or alcohol.
- ▶ Types of work tasks conducted, i.e., light, medium, or heavy work.
- ▶ Temperature and humidity.
- ▶ Clothing and personal protective equipment (PPE) worn.

Given that we lose water through perspiration, any work activities that increases our sweating rate, as well as warmer temperatures, are key factors to consider when determining worker hydration needs. The tables below present indicative values for consideration.

Table 1.1.2. Hydration needs based on activity and temperature.

	Sedentary, Temperate Environment	Physically Active and/or Increased Temperature
Female adult	2.2 litres/day	4.5 litres/day
Male adult	2.9 litres/day	4.5 litres/day

Source: Howard G, Bartram J. (2003) Domestic Water Quantity, Service, Level and Health. World Health Organization.



Table 1.1.3. Indicative hydration needs, based on temperature, activity and work/rest ratio.

WetBulb Globe Temperature (WBGT)	Light (easy) work		Moderate work		Heavy work	
Celsius	Work/rest ratio limit	Water intake (litres/hr)	Work/rest ratio limit	Water intake (litres/hr)	Work/rest ratio limit	Water intake (litres/hr)
25.6-27.7	NL	0.5	NL	0.75	40/20 min	0.75
27.8-29.4	NL	0.5	50/10 min	0.75	30/30 min	1
29.4-31.1	NL	0.75	40/20 min	0.75	30/30 min	1
31.1-32.2	NL	0.75	30/30 min	0.75	20/40 min	1
>32.2	50/10 min	1	20/40 min	1	10/50 min	1

Notes:

1. Values are indicative in nature
2. NL=no limit to work time per hour
3. If wearing mission oriented protective posture 4, add 6 °C to WBGT
4. If wearing personal body armour, add 3 °C to WBGT in humid climates
5. Daily fluid intake should not exceed 12 litres
6. Caution: Hourly fluid intake should not exceed one litre
7. Rest means minimal physical activity (sitting or standing), accomplished in shade if possible
8. These work/rest time and fluid replacement volumes sustain performance and hydration for at least four hours of work in the specified work category. Individual water needs may vary ± 1/4 lt/hr

Source: Published in *Safety and health in agriculture. ILO code of practice. Appendix VI. Adapted from: Montain SJ, et al. Fluid Replacement Recommendations for Training in Hot Weather. Military Medicine, 164,7:502-508, 1999.*

Heat-related illnesses

Dehydration is a key cause of heat illnesses, including heat rash, heat stress, heat exhaustion and heat stroke. Working in environments with high air temperatures or high humidity, radiant heat sources, or strenuous physical activities have a high potential for inducing heat stress in workers. Examples may include:

- ❑ Indoor or closed-space operations like iron and steel foundries, brick-firing plants, glass and rubber production facilities, electrical utilities (boiler rooms), kitchens, chemical plants, underground mines, and smelters.
- ❑ Outdoor operations conducted in hot weather, such as agriculture, construction, mining, refining, and hazardous waste site activities, especially those that require workers to wear semipermeable or impermeable PPE.

What about special groups of workers?

- ▷ **Young workers** are vulnerable to dehydration due to their developing bodies. They are less able to regulate their body temperatures in hot working conditions. Young workers generate more heat per pound of body weight than adults. They also may lack the knowledge for maintaining hydration while at work.
- ▷ **Pregnant women** require additional fluid replacement to ensure that foetal needs are met, as well as providing for expanding extra-cellular space and amniotic fluid. Pregnancy naturally elevates the body's temperature, making women more vulnerable to heat exhaustion.

- ▶ **Lactating women** have additional water requirements, of 750ml to 1 litre per day for the first six months of lactation.
 - ▶ **Disabled workers** may face barriers to accessing drinking water stations. They may also have different requirements for water intake.
 - ▶ **Older workers** may not require additional volumes of water, but may be at greater risk from dehydration due to decreasing thirst sensations.
 - ▶ **Ill or immunocompromised workers** may be more likely to get sick from water that is contaminated when compared to healthy workers. Based on their illness, they may already suffer from dehydration and require a certain amount of water, or electrolyte intake needs.
- tightly closed to protect water from being contaminated from outside sources;
 - have a tap or a cock for the dispensing water;
 - clearly marked with what they contain; and
 - regularly cleaned and disinfected to be sure that they do not become contaminated.



Reminder: Keeping water safe

Drinking water should come from an approved source, whether that means it is piped and running, or it is provided in containers. What is important is that it is kept clean and safe from contamination. This means that water should *never be provided in open containers such as buckets or pails that workers dip into*. Open water sources, like buckets, increase the risk of water contamination from airborne germs; insects, pests and other animals; chemical hazards like pesticides; and exposures from other workers' hands, cups or pails.

What are workplace requirements for drinking water?

Access to safe drinking water at the workplace is a fundamental human right. To keep workers safe, healthy and productive, employers must guarantee access to safe drinking water, related materials (such as cups), and as well as maintenance of water facilities. Recommendations for drinking water provisions at the workplace are presented below.

Drinking water should come from an approved source

This means that it should be approved, supplied and monitored by a water authority and should be guaranteed to be potable.

- ▶ Running water should be provided if it is available and practical. Examples include piped water fountains, and water installations connected to a piped source.
- ▶ If running water is not available, potable water should be provided in containers. Examples include water coolers, jerry cans, or other closed and tapped containers. Containers should be:
 - ▶ The ideal situation is that water does not have any taste that makes users question its quality. It is important to remember that taste alone does not always indicate a direct health problem (e.g. water that tastes slightly of chlorine does not pose a health risk), but if the safe water supply does not taste good, users may decide to drink from unsafe sources instead (e.g., untreated surface water from ponds or lakes) and put their health at risk.
 - ▶ Water should be at an appropriate temperature, based on the workplace and environmental conditions. In room temperature environments, water that is



cool is more palatable than warm water, encouraging workers to drink.



Reminder: Water vs. other drinks

Potable drinking water should always be provided for workers to maintain hydration.

In certain cases, other drinks could be provided if necessary based on work place conditions, such as:

- ▶ Diluted flavoured drinks
- ▶ Low salt concentration drinks
- ▶ Warm drinks for rehydration in cold environments

Drinks that should NOT be promoted and provided:

- ▶ High sugar drinks, like soda
- ▶ High caffeine drinks, like energy drinks
- ▶ Alcoholic beverages

Drinking water should always be accessible

Accessing drinking water should always be easy and convenient for all workers at the workplace.

- ▶ The needs of disabled workers should always be considered. Workplace drinking stations should be designed in a way that makes access easy for everyone. Water-drinking facilities should not be too high, and there should not be unnecessary obstacles to reach them.
- ▶ In sectors such as construction, agriculture or forestry, or where workers are required to move and change worksites often, drinking water should be available either at every worksite, or within reasonable access – which means it should be located at a convenient distance for all workers. Mobile water dispensing units that are closed and have a spout are an easy solution. Another option could be to provide workers with backpacks that contain potable water, with personal drinking attachments (see textbox below).

- ▶ Working in mines can be hot and hard work! Drinking water should be accessible *above and below* the surface of the mine as needed.



Case study: Hands free hydration

In El Salvador, a mixed-method intervention study was conducted among sugarcane cutters to reduce heat stress and dehydration without decreasing productivity. Sixty workers were provided an individual backpack-mounted water container with a connected flexible tube and mouthpiece for continuous and hands-free hydration. The intervention also included mobile shaded rest areas, scheduled rest periods, ergonomically improved machetes, and efficiency strategies. Health data were collected at different intervention stages. Post-intervention water consumption among workers increased 25 per cent compared to baseline. Heat stress and dehydration symptoms decreased. Daily production per person increased from 5.1 tons of sugarcane to a high of 7.3 tons of sugarcane at post-intervention, which was greater than in other cutting groups. Participant focus groups provided positive reports on the programme components that seemed to significantly reduce the heat stress impact.

Source: Bodin, T., et al., 2016. "Intervention to reduce heat stress and improve efficiency among sugarcane workers in El Salvador: Phase 1", in Occup Environ Med, Vol. 73, No. 6), pp.409-16.

Appropriate drinking vessels should be provided

Other workers can easily contaminate drinking water especially if they are sick or have been exposed to hazardous substances at the workplace. For this reason, drinking vessels should not be shared.

- ▶ Individual drinking vessels, such as cups or bottles should be provided for each worker, and be of personal use. Drinking vessels should not be shared between workers.

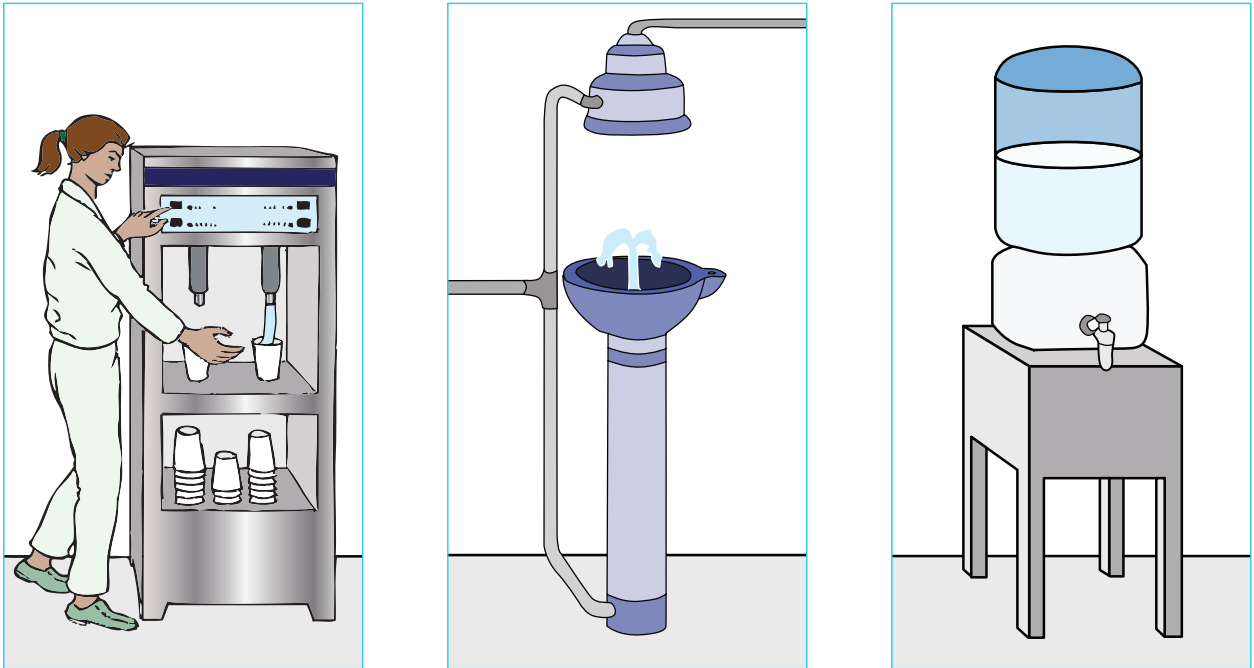


Figure 1.1.1. Appropriate ways of providing drinking water at the workplace. ILO/WHO HealthWISE Action Manual, 2014.

- ▷ If single use vessels are not provided, potable water should be available in close proximity to the drinking station to regularly clean drinking vessels.
- ▷ Hands may be contaminated and pose a health risk, and thus should not be used as a method for drinking water (i.e., cupped hands that are drunken from).

Drinking water provisions should be appropriate for workplace conditions

Workplaces differ dramatically based on sector and work task. The best way to understand the most appropriate methods of drinking water provision are to conduct a workplace risk assessment. Elements to consider include:

- ▷ Temperature and humidity of working environment (Table 1.1.4.).
- ▷ Type of work activity (light, moderate, or heavy).
- ▷ Location of work tasks and proximity to drinking stations.
- ▷ Individual needs of workers (i.e., are workers acclimated to the working environment).
- ▷ Potential for water contamination. For example, pesticides and fertilizers can contaminate water on agricultural lands, and there should be extra care to ensure that water is potable for workers in these settings.

Table 1.1.4. Considerations for drinking water provision based on hot and cold working conditions.**In hot working conditions (for example, outdoor in tropical climates, or in mines/foundries):**

- ▶ Make water at low salt concentration or dilute flavoured drinks readily available as necessary
- ▶ Encourage workers to drink at least hourly
- ▶ Confirm that the drinking source is close by, or arrange for drinks to be brought to workers
- ▶ Consider drinks that are at 15 to 20 °C, as these are preferable to iced drinks.
- ▶ Consider that drinking fountains may be too difficult to drink from in sufficient volume
- ▶ Do not provide, and discourage the drinking of alcohol, caffeine, carbonated drinks or drinks with a high salt or sugar content. Remember that alcohol consumption inhibits judgement and coordination, dehydrating the body and making it more susceptible to heat stress
- ▶ For physical work in hot conditions, one litre or more per hour per workers may be required
- ▶ Provide shaded rest areas for workers to rest under while taking breaks and drinking water

**In cold working conditions (for example, in outdoor work during winter season, in cold storage work):**

- ▶ Provide heated rooms where workers can drink water or other liquids to maintain hydration
- ▶ Make water and dilute flavoured drinks readily available as necessary
- ▶ Provide warm drinks for rehydration
- ▶ Consider that drinking fountains may be too difficult to drink from in sufficient volume
- ▶ Do not provide, and discourage the drinking of alcohol, caffeine, carbonated drinks or drinks with a high salt or sugar content. Remember that alcohol consumption inhibits judgement and coordination, dehydrating the body and making it more susceptible to cold stress.

**Reminder: Water in self-contained rescue chambers**

Underground mining can be particularly hazardous, especially when it comes to emergency situations such as floods, fires, explosions, mine collapses, and the release of toxic gas or dusts. In certain emergency situations when workers do not have enough time to reach a mine exit, self-contained rescue chambers may provide temporary protection. The Safety and Health in Mines Recommendation, 1995 (No. 183), notes that safety chambers should be equipped with potable water, food, breathing equipment, and telephone connections.

Source: ILO (1994). Safety and health in mines. Record of Proceedings, Provisional record 26. International Labour Conference (81st: 1994 Geneva).

**Reminder**

Drinking water provisions may be based upon the work sector or work activities. Refer to ILO instruments for recommendations on water in the Introduction.

GUIDE 1.2. SAFE WATER FOR PERSONAL AND WORKPLACE HYGIENE

In addition to safe water for hydration needs, there are other workplace needs where access to safe water is crucial for worker health, wellbeing, and productivity. Access to safe water for all workers is necessary for the management of:

1. Personal hygiene (for washing and bathing)
2. Workplace hygiene (cleaning and laundering)
3. Food hygiene (preparing food/cooking)

1. Water for personal hygiene

Access to safe water at the workplace is required for maintaining personal hygiene through the proper use of sanitary and washing facilities. Poor hygiene at the workplace can be related to a lack of sufficient quantity of safe water supply. For this reason, workplaces must treat access to safe water not solely as a question of hydration needs, but also as a matter of personal hygiene.

Sanitary facilities

The type of sanitary facilities provided, including whether they are piped (flush toilets) or unpiped systems (latrines or composting toilets) has a big impact on water requirements. Flush toilets often require large volumes of water, while pour flush toilets or latrines may require much less, and dry latrines none at all. Whatever the case may be, employers are responsible for ensuring that the necessary means to maintain the sanitary systems in place is provided, including the provision of water. This is particularly important for the agricultural sector, where a lack of sanitary facilities and their maintenance can jeopardize the health of agricultural workers and their crops.

Additional quantities of water may also be necessary for personal cleansing with water or a hand-held bidet sprayer (i.e., anal washing), where toilet paper is not used. This will be function

of the cultural context of the workers, which must be taken into consideration when designating the amount of water needed for sanitary facilities.



Estimates of water needs for sanitary facilities:

- ▶ Flushing toilets: 10-20 liters per person per day
- ▶ Pour-flush toilets: 1.5-3 liters per person per day
- ▶ Anal washing: 1-2 liters per person per day

Source: UNICEF (2013). WASH in Schools Guidelines for Lebanon

Handwashing and bathing

Handwashing with soap and water at critical times is essential for maintaining good personal hygiene. The same goes for the washing (showering and bathing) when necessary, particularly after handling or being exposed to hazardous substances (such as germs from animal handling or slaughtering, or spraying pesticides) or great amounts of dusts (including coal or rock dusts). Water for handwashing and for bathing must be potable, so that it does not pose a health risk for workers.



Risks from contaminated water when washing

Naegleria fowleri (known as the “brain-eating amoeba”) is a free-living microscopic amoeba that has caused deaths associated with using domestic water supplies. During showering or bathing with amoeba-contaminated water, the amoeba can enter through the nose, and travel to the brain where it causes Primary Amebic Meningoencephalitis, which is usually fatal.

Source: CDC (2015). Facts About Naegleria fowleri and Primary Amebic Meningoencephalitis



Menstrual hygiene management (MHM)

Workplace provision of potable water for washing should also take into consideration needs for MHM (Hygiene Module, Guide 1.5). Menstruating girls and women may have special needs for safe water access.

- Access to safe water should be guaranteed within toilet cabins for handwashing, as well as for washing of soiled menstrual materials in privacy.
- Access to safe water should also be guaranteed in private washing facilities or showers, as necessary, to maintain personal hygiene.

2. Water for workplace hygiene

Access to water at the workplace is also necessary for managing cleanliness through routine and specialized cleaning and laundering. Maintaining hygienic conditions at the workplace promotes worker health, wellbeing and morale. It may include:

- ▷ Standard cleaning of workplace surfaces (including floors, windows, ceilings and sanitary and washing facilities).
- ▷ Disinfection of surfaces when necessary (in settings with exposures to hazardous substances, such as biological liquids or medical waste).
- ▷ Laundering of workplace materials, like towels and bedsheets.
- ▷ Cleaning or laundering of workplace clothing or PPE.

The amount of water necessary for cleaning and laundering will be dependent on the work sector and work tasks. Consult ILO instruments for recommendations on workplace cleaning based on the work sector in the Introduction.

3. Water for food hygiene

Water represents an essential medium for cleaning, preparing and cooking food. The water used for these needs will contact the food for ingestion, meaning that it must be safe from contaminants and not pose a health risk for workers. For this reason, all workers should have access to potable water for food and cooking related needs, including water for:

- ▷ washing foods;
- ▷ water for preparing and cooking foods; and
- ▷ water for cleaning utensils and cooking materials.

The amount of water workers require for cooking is difficult to specify as this will depend on the diet, the role of water in food preparation, and worker needs for cooking at the workplace, based on the work sector characteristics. At workplaces that are isolated, and where workers also have accommodations, such as on fixed offshore installations, or in the maritime industries, it is essential that potable water be provided in adequate amounts.



Estimates of water for cooking needs

While the amount of water needed for cooking will depend on the food consumed, most cultures have a staple foodstuff that is often a carbohydrate-rich vegetable or cereal. A minimum requirement for water supplies should take into consideration the amount of water needed to be able to prepare an adequate quantity of the staple food to provide nutritional benefit. The WHO has estimated that **three to six liters of water per day per person** is necessary to meet basic cooking needs.

Source: WHO (2013). How much water is needed in emergencies. WHO: Geneva, 2013.



GUIDE 1.3. DRAINAGE, VECTOR CONTROL AND WATER-RELATED RISKS

Water at the workplace should be approached as an environmental issue, one that has direct linkages to OSH. Certain workplace conditions can pose a water-related health risk for workers, and appropriate risk management strategies and control measures are necessary.

1. Drainage

Surface water that is present around the workplace or worker accommodations may come from workplace wastewater (including hazardous effluents, like from medical facilities), leaking toilets, rainwater or rising floodwater. There are several health risks associated with rising surface water, including:

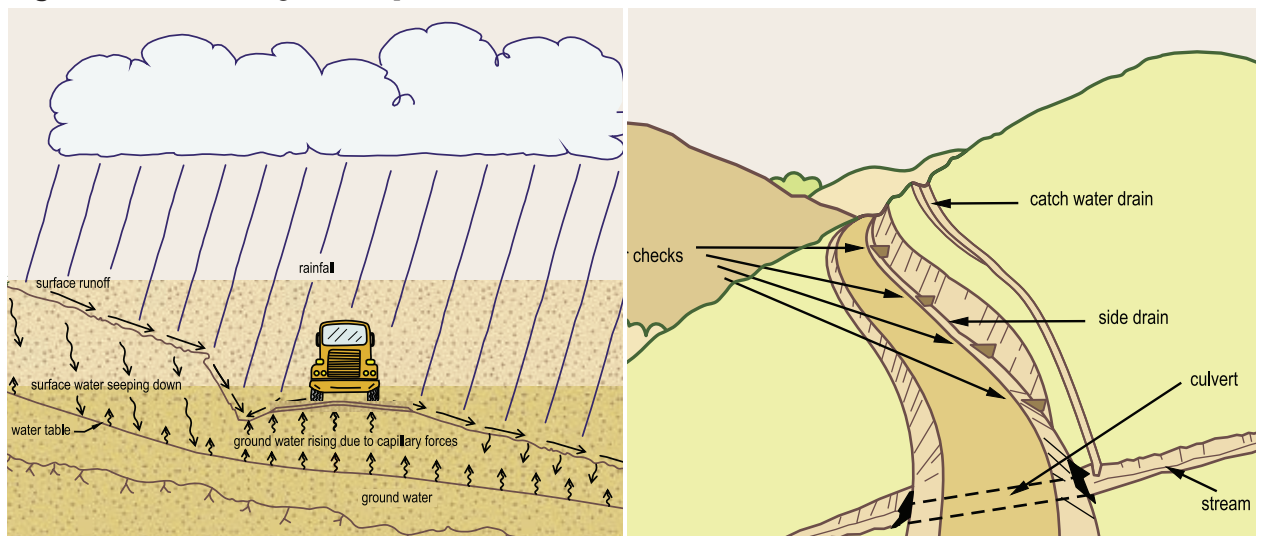
- ▷ contamination of water supplies, and the working and living environment;
- ▷ damage to sanitary facilities and workplace structures;
- ▷ vector breeding; and
- ▷ drowning.

For this reason, a workplace risk assessment should be conducted to understand the potential for rising surface waters. Actions that can be taken include:

- ▷ the development of an adequate water drainage plan;
- ▷ site-planning and design to deal with stormwater drainage; and
- ▷ wastewater disposal using small-scale, on-site drainage, including run-off from irrigated agricultural land

The aim of appropriate drainage control at the workplace is for workers to work, and in some cases, to live and thrive, in an environment in which health risks are minimized from standing water, including stormwater, floodwater, domestic wastewater and wastewater from medical facilities.

Figure 1.3.1. Drainage techniques



Source: *Local investments for climate change adaptation: Green jobs through green works, 2011*



Vector-borne diseases associated with water (examples, not limited to):

- ▶ Japanese Encephalitis
- ▶ West Nile Virus
- ▶ Malaria
- ▶ Yellow Fever
- ▶ Dengue Fever
- ▶ Onchocerciasis

Source: CDC (2016). WASH-related diseases.

2. Drainage for vector control

Water drainage is particularly important for vector control at the workplace or workplace accommodation.

Vector-borne diseases are a major cause of sickness and death, especially in situations where there are rising waters, standing water and lack of drainage. Mosquitoes are the vectors responsible for malaria transmission, which is one of the leading causes of morbidity and mortality. Mosquitoes also transmit other diseases, such as yellow fever and dengue.

Drainage of water sources at the workplace for vector control purposes represents most effective intervention according to the Hierarchy of Controls, i.e., the complete elimination of the hazard.



Reminder: Vector control as a comprehensive WASH issue

When it comes to keeping workplaces safe from vector-borne diseases, the action points extend far beyond water drainage. Vector control is a comprehensive workplace initiative that includes proper management of water, sanitation and hygiene, including:

- ▶ Excreta management
- ▶ Solid waste management
- ▶ Use of chemical controls
- ▶ Site selection for workplaces and provision of shelters as needed
- ▶ Effective protection of food stores

3. Water-related risks

Some work sectors or work tasks require that workers work in or around water sources.

Examples include:

- ▶ Offshore and onshore fishing
- ▶ Aquaculture
- ▶ Agricultural work with water dependant crops, such rice paddies
- ▶ Construction of fixed offshore installations in the petroleum industry
- ▶ Mining in water-filled areas

Working in or around water poses unique OSH risks that must be assessed and mitigated to protect worker safety and health. Examples may include: exposure to waterborne diseases, drowning and electrocution.

Waterborne diseases

Drainage is not always an option for risk reduction when it comes to protecting workers from waterborne diseases. For example, some agricultural workers must spend long periods of time standing in water-dependant rice paddies. In this case, draining of the agricultural field is not a viable solution. To protect from the risk of schistosomiasis (text box below), workers must take adequate protective precautions, such as the use of rubber boots. For this reason, when it comes to working in, and around water, a full workplace risk assessment should be conducted to better understand which hierarchy of control measures should be taken.

**Key resource: Schistosomiasis**

Schistosomiasis is a major parasitic disease of tropical and subtropical regions that is transmitted when larvae of infected aquatic snails penetrate the skin. It is primarily spread by contact with water. Availability of safe drinking water contributes to disease prevention by reducing the need for contact with contaminated water resources—for example, when collecting water or when using water for bathing or laundry. Agricultural workers who stand for long lengths of time in places where aquatic snails are prevalent, such as rice paddies, are at particular risk for this disease. For more information, see WHO's Fact Sheet on Schistosomiasis.

Electrocution

Electrical shock accidents have become more prevalent as workplaces become more dependent on electricity and machines for workplace tasks. Water can be a strong conductor of electricity, increasing chances of electrocution. When working with electricity or electrically powered machines:

- ▶ Stay away from water sources and wet surfaces or areas.
- ▶ Handle all electrical devices on dry areas only.
- ▶ Make sure that all power sources and switches are turned off being cleaning or washing electrical equipment.
- ▶ Use warning signs near water sources or wet areas.

Drowning

While it is not often considered, the risk from drowning is a significant concern for workers working over and alongside water sources.

- ▶ In construction, workers may work over water. There is a possibility that workers may fall in, necessitating water rescue equipment or services.
- ▶ In mining, or the water works sector, workers may be in an area that could suddenly fill with water, sewage, or other liquid. In areas that workers can be washed away, or where workers could drown, hazard points should be identified as well as water rescue precautions.
- ▶ In work sectors where there is a risk of drowning, appropriate warning signs should be posted, and safety equipment such as life jackets should be provided.





GOVERNMENT ACTION MANUAL: WATER

Governments are key stakeholders in the campaign for access to safe water. By developing, promoting and raising awareness of policies for access to safe water at the workplace, governments can reduce the burden of disease related to contaminated drinking water, and enhance the health, wellbeing and productivity of its working citizens, and their communities. This Manual provides checkpoints on how governments can streamline workplace access to safe water into their existing OSH frameworks, and how they can develop new initiatives as needed.



Checkpoint G.1.1. Integrate considerations for workplace access to safe water into OSH policies, systems and programmes

Why?

Access to safe water is the foundation for healthy workers, communities, and in turn, productive economies. The government has the responsibility to develop sound water policies for the workplace, as well as to integrate them into national OSH systems and programmes into to promote preventative safety and health culture and reduce water-related risks at work.

How?

- ▣ Promote the development of preventative safety and health culture with water-specific policies, programmes, systems and campaigns. This may include initiatives on:
 - Worker hydration needs and actions to prevent heat stress, in particular where the nature of the work is highly physical and/or takes places in warm/hot conditions.
 - Reduction of chemical contamination of water, through awareness raising on effluent dumping.
 - Workplace drainage and vector control.
 - Workplace water-related OSH risks.
- ▣ Develop targets to indicate health based milestones which will guide and track progress toward a predetermined water quality goal. Health based targets represent an integral part of WASH-policy development. Four types of health-based targets to consider include:
 - *Health outcome targets* (quantifiable reduction in the overall level of illness or disease related to improved water quality)
 - *Water quality targets* (meeting a Guideline value, or concentration of a specific contaminant, e.g., lead)
 - *Performance targets* (how well an intervention has worked, expressed as reduction of the contaminant of concern or effectiveness in preventing contamination)
 - *Specified technology targets* (e.g., interventions in the community or in the households to use specific water technologies)
- ▣ Dedicate funding to allow for promotion of access to safe water in workplace.



Key resource: Campaign to prevent heat illness

In 2014 alone, 2,630 workers suffered from heat illness and 18 died from heat stroke on the job in the US. Understanding that heat illness is preventable, and linked to access to safe water to maintain hydration, the US Occupational Safety and Health Administration (OSHA) developed a campaign to inform employers and protect workers' health. The **Water.Rest.Shade. Campaign** provides educational resources, trainings, and toolkits for workers and employers on how to reduce heat illnesses, with specific action points on access to safe water at the workplace.



Checkpoint G.1.2. Establish and enable laws for access to safe water at work

Why?

The most cost-effective and protective means of consistently assuring a supply of acceptable drinking water at the workplace is the application of risk management and supported by appropriate laws. Governments are responsible for establishing drinking-water norms and standards, as well as specific laws for workplace access to safe water.

How?

- The competent authority should develop and periodically update statutory provisions on water-related needs at the workplace. This should include laws on:
 - Approved sources for drinking water at the workplace, as well as distance points for accessibility.
 - The number and type of drinking water facilities at the workplace, as well as accessibility for people with disabilities.
 - Provision of drinking vessels.
 - Provision of water for personal and workplace hygiene.
 - Methods for managing water-related risks, such as drainage and vector control.



Checkpoint G.1.3. Approve and monitor water supply agencies, and implement appropriate surveillance mechanisms

Why?

A number of stakeholders play an important role in the provision of safe drinking water, including public health authorities, local authorities, water supply agencies, and water supply operators. In addition, monitoring of water supply agencies is essential to ensure sustainable provision of safe drinking water. Surveillance promotes the improvement of the quality, quantity, access, affordability, and continuity of water supplies, and

should be complementary to the quality control function of the drinking-water supply agency.

How?

- Hold consultations with regional and local water supply agencies and water supply operators to ensure the provision of potable water to workplaces.
- If running potable water to workplaces is not feasible, approve the provision of drinking water from private providers.
- Ensure adequate resources for the proper functioning of water supply services and water supply operators to minimize risks of contamination.
- Assign an agency to be responsible for the surveillance of drinking-water supply services and operators.
 - In many countries, surveillance is the responsibility of the ministry of health, or public health, and its regional or departmental offices. It may also be an environmental protection agency, or environmental health departments of local governments.
- Ensure effective surveillance mechanisms to ensure consistency in potable water supply to workplaces.
- Provide assistance to the local water authorities, suppliers and operators, and surveillance agency, to develop a Water Safety Plan (text box below).
- Develop plans which will be activated in the event of an emergency, which clearly specify responsibilities for coordinating measures to be taken, a communication plan to alert and inform users of the drinking-water supply and plans for providing and distributing emergency supplies of drinking-water.





Key resource: Water Safety Plans (WSP)

WSPs are a powerful tool for the drinking-water supplier to manage the supply safely. They also assist surveillance by public health authorities. The objectives of a WSP are to ensure safe drinking water through good water supply practice, that is:

- ▶ To prevent contamination of source waters;
- ▶ To treat the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets; and
- ▶ To prevent re-contamination during storage, distribution and handling of drinking water.

The **WHO's Water Safety Plans** document provides guidance on how WSPs can be developed by public health authorities for a range of water supply types.



Reminder: The role of local authorities

Local environmental health authorities often play an important role in managing water resources and drinking-water supplies. This may include catchment inspection and authorization of activities in the catchment that may have an impact on source water quality. It can also include verifying and auditing (surveillance) of the management of formal drinking-water systems. Local environmental health authorities can also provide guidance to employers in designing and implementing workplace drinking-water systems and correcting deficiencies. They also have an important role to play in educating social partners on where workplace water treatment is necessary.



Checkpoint G.1.4. Inspect water provisions at work

Why?

Labour inspection is the continuous and vigilant assessment and overview of the safety and acceptability of workplace provisions, particularly as they relate to OSH. It is imperative that these responsibilities extend to monitoring of WASH concerns such as drinking-water supplies. Such actions can work to actively promote and protect the safety and wellbeing of workers and their families.

How?

- Provide training on access to safe water at the workplace, and worker needs for drinking water, as well as water for personal and workplace hygiene management. Ensure that specificities are captured by sector, by referring to the corresponding Table on ILO instruments in the Introduction. Practicable guidance for training topics include:
 - Definitions of improved water sources, and regulations concerning safe water provisions to the workplace.
 - Drinking water and hydration needs at the workplace, particularly by sector, for example:
 - the provision of drinking water below and above ground at mines
 - distance to the water source, particularly relevant for agriculture, forestry, and similar jobs that require movement of workers
 - Considerations for drinking water accessibility, particularly for disabled workers.
 - Water drainage, vector control and water-related OSH risks.
- Promote prevention policies on water-related risks in labour inspection.
- Enforce the application of water access laws at work, using sanctions as needed to promote the protection of workers.



Integrating WASH into worksite hazard assessment

Workplace risk assessment and hazard identification can easily integrate WASH at work topics, such as workers' access to safe water. A WASH-focused hazard identification would identify factors that are noticeable during worksite walk-through inspections by labour inspectors, for example:

- ▶ Availability and provision of potable drinking water, for all workers, including those with disabilities.
- ▶ Availability and provision of drinking vessels.
- ▶ Availability and provision of water for personal and workplace hygiene.

Hazard identification would also address organizational factors that may be less obvious to notice on walk-throughs but can be identified when talking to supervisors and workers. Such organizational factors include worksite WASH policies and practices, rest-breaks for drinking water, workplace training on hydration management, and compensation mechanisms that may influence taking rest breaks (e.g. piece rate vs. hourly wages).



Module 1: Water
Government Checklist

G.1.1	Are considerations for workplace access to water integrated into OSH policies, systems and programmes?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G.1.2	Have laws been established and enabled for workplace water provisions (including laws for drinking water facilities, and water for personal and workplace hygiene?)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G.1.3	Have services for potable water provision and surveillance been approved? Is there a system in place for monitoring these services?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G.1.4	Is there a system in place for training labour inspectorates on water-related risks (including vector control), and ensuring inspections are carried out systematically?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?



EMPLOYER'S ACTION MANUAL: WATER

Employers, as well as their respective organisations, are imperative in promoting essential labour standards for OSH. Employers' organisations have a central role in influencing employers on how to manage OSH measures as they relate to WASH provisions, particularly small enterprises in the local informal economy. Employers are fundamental in developing and maintaining social dialogue (information sharing, consultations or negotiations) with government agencies, workers, workers' representatives, and trade unions, when it comes to WASH at work, including access to safe water and management of water-related risks.



Checkpoint E.1.1. Maintain transparent communication with public water authorities to ensure that water is provided by an officially approved source

Why?

Water that does not come from an officially approved source may be contaminated and cause illness in workers.

How?

- Develop a plan and a design for the provision of drinking water.
- Review plans with the local competent authority to ensure the workplace is compliant with local laws.
- Make arrangements with the competent authority to inspect water sources and to provide official approval that water is fit for human consumption.
- Seek approval from the competent authority for water transport arrangements, if drinking water has to be transported to the worksite.

- How transport tanks, storage tanks and dispensing containers are designed, used, cleaned and disinfected should be approved of by the competent authority.

- Seek approval from the competent authority for the provision of drinking water from private providers, if this is the case.
- Establish a system for regular checks of water quality by the competent authority, or have appropriately trained staff on site undertaking this activity.



Checkpoint E.1.2 Provide adequate amounts of safe drinking water that is easily accessible

Why?

Dehydration quickly reduces physical and mental ability, and can reduce productivity and increase the risk for accidents at the workplace. Potable water should be provided for drinking and should be protected from contamination. Non-potable water can make workers sick and should not be confused with potable water.

How?

- Conduct a workplace risk assessment to understand drinking water needs, based on
 - temperature and humidity;
 - activity level of work tasks;
 - individual worker characteristics, including disability; and
 - distances between work tasks and drinking stations



- ❑ Provide potable drinking water only from the sources approved by the competent authority, and according to national laws.
- ❑ Choose running drinking water if available and practical.
- ❑ Provide water in containers when running water is not available or practical. Be sure containers are:
 - Tightly closed. Do not provide open containers such as buckets or pails that workers dip into!
 - Have a tap or a cock for water dispensing.
 - Are clearly marked with what they contain.
 - Are regularly cleaned and disinfected.



Case study: Promote water over nutrient-poor sugary beverages

The promotion of drinking water is an essential component in workplace wellness initiatives. In high- and middle-income countries, the consumption of sugar-sweetened beverages has been increasing. A study by Davy *et al.* (2014) evaluated how workplace factors influenced beverage consumption among overweight employees. Improved access to and provision of safe drinking water and removal of nutrient-poor sugary beverages from the worksite may assist in promoting water consumption, thus maintaining the workers' proper hydration status. The study recommendations included limiting the availability of vending machines selling nutrient-poor beverages (Davy *et al.*, 2014).



Reminder: The Hierarchy of Controls

The Hierarchy of Controls is an internationally established framework to prevent and control safety and health hazards by identifying effective interventions. The Hierarchy of Controls holds that the most effective intervention is complete elimination of the hazard. The second most effective strategy is substitution, followed by engineering controls and administrative controls. A WASH-related example for “substitution” is replacing sugar-sweetened soft drink like beverages with safe drinking water.

Source: Davy, BM et al. 2014. “Impact of individual and worksite environmental factors on water and sugar-sweetened beverage consumption among overweight employees”, in Prev Chronic Dis, Vol. 11, No., pp.E71.

- ❑ Make sure accessing drinking water is *convenient* for workers, regardless of sector. This includes work tasks that may be removed from workplace facilities, such as agriculture, mining and construction.
- ❑ Consider the needs of disabled workers. Design the workplace drinking stations in a way that makes access easy for everyone.
- ❑ Provide personal drinking vessels, either for one-time use, or provide clean water to wash drinking vessels regularly.



Reminder: Access to safe water in maritime industries

Access to potable water for workers on ships and other vessels is especially important to protect from infectious disease transmission. Due to their distance from shore and water supply services, workers on ships may be exposed to microbial risks associated with water contaminated with human and animal excreta. Chemical contamination is also a concern due to contaminated bulk water being brought aboard in port, cross-connections on board or improper on-board treatment. Employers should ensure that only potable water is used for drinking and that it is properly maintained to reduce on-board sickness. In addition, staff responsible for working with the potable water system should be properly trained.

Source: Davy, BM et al. 2014. "Impact of individual and worksite environmental factors on water and sugar-sweetened beverage consumption among overweight employees", in Prev Chronic Dis, Vol. 11, No., pp.E71.

Protect from contaminated drinking water:

- ❑ Clearly mark potable and non-potable water sources in recognizable signage.
- ❑ Prohibit drinking in places where hazards can contaminate drinking water. Enforce rules that allow drinking water only in designated areas.



- ❑ Keep water away from chemicals and other hazardous substances, and ensure that drinking water sources do not mix with water-run off.
- ❑ Ensure that drinking water is not connected to a supply of non-potable drinking water. Contact the competent authority if in doubt.
- ❑ Clean and disinfect transport tanks, storage tanks and dispensing containers regularly, as recommended by the competent authority.
- ❑ Ensure testing of drinking water on a regular basis by the competent authority.



Case study: Water distribution systems can be contaminated, too.

In Europe, studies have reported that one-third of gastrointestinal illness outbreaks can relate to water distribution systems. A Spanish study described an outbreak of acute gastroenteritis (AGE) among employees at an appliance factory. An investigation identified 302 AGE episodes affecting 238 people between June and September 2013. The environmental study detected a connection between an industrial water system and the canteen's drinking water at the factory.

Lesson learned: Develop transparent relationships with local water authorities and ensure that regular testing of drinking water is conducted to protect your health, and the health of your workers.

Source: Altzibar, JM. et al. 2015. "Outbreak of acute gastroenteritis caused by contamination of drinking water in a factory, the Basque Country", in J Water Health, Vol. 13, No. 1), pp.168-73.



Checkpoint E.1.3. Provide adequate amounts of safe water for personal and workplace hygiene

Why?

Water is a central element in maintaining both personal and workplace hygiene. Access to safe water is essential for cooking, cleaning and laundering needs in order to keep workers safe and productive.

How?

- Conduct a workplace risk assessment for water-related needs related to personal and workplace hygiene.
- Provide potable water for handwashing facilities and for bathing and showering facilities.
- Provide potable water for cooking needs, including for washing of foods, utensils and materials, as well as for food preparation, if needed at the workplace.
- Provide water for workplace cleaning and laundering, as needed based on the work sector and activity.
- Follow national laws on water provision for other workplace needs, and refer to Table on ILO instruments in the Introduction.



Checkpoint E.1.4. Ensure effective drainage control, as well as management of water-related OSH risks

Why?

Water at the workplace is essential to worker health and productivity. However, water can also pose a health risk when it is contaminated, be destructive to workplace facilities, or serve as a breeding ground for vectors.

How?

- Conduct a workplace risk assessment for water-related risks, including vector-related risks and OSH risks for specific work sectors or activities.

Water drainage:

- Ensure that water point drainage is well planned, built and maintained. This includes drainage from sanitary facilities and washing areas. Remember that special oversight is necessary to ensure that toilets are safe from flooding in order to avoid structural damage and leakage.
- Eliminate or control on-site habitats for vectors, such as tires, buckets and standing pools of water.
- Cover the top of rainwater catchment basins and other necessary workplace containers with insect netting.
- Ensure that irrigation systems are designed and operated to discourage the propagation of snails. An example for control measure is to allow a rapid flow of water and proper drainage, or introduce screens at water intakes to block adult snails.

Water-related OSH risks:

- Ensure that appropriate workplace measures are taken, according to the Hierarchy of Controls, to reduce water-related risks and hazards, such as:
 - Waterborne diseases
 - Drowning
 - Electrocutation



Checkpoint E.1.5. Integrate information on hydration needs, access to safe water and water-related risks into workplace training

Why?

Workers that are informed of how to properly manage their own hydration and workplace water needs, as well as water-related risks, will be better equipped to protect their health and safety, and may contribute to a more productive workplace.

How?

- Integrate information on hydration, workplace access to safe water, and water-related risks into workplace trainings. For all sectors, cover topics on:
 - Importance of hydration and key steps for hydration management.
 - Location of drinking water facilities and their proper maintenance.
 - Location, use and maintenance of water facilities for personal and workplace hygiene.
 - Importance of workplace water drainage and vector control.
 - Water-related risks specific to their sector and activity, and mitigation strategies.
- Provide specific instruction for water needs based on workplace sector and conditions. Consult Module 1 for specific instructions.



Checkpoint E.1.6. Record and report hygiene specific occurrences, incidents, diseases and accidents

Why?

Employers, and employers' organizations have the potential to gather and share valuable statistics on the incidence of water-related risks, illnesses and diseases, which would provide evidence towards the development of prevention programs, as well as workplace policies.

How?

- Develop a transparent and reliable system for recording water-related occurrences, incidents, diseases and accidents; or, integrate water issues into your existing system. Examples may include:
 - Malfunctioning of drinking water facilities, or contamination of drinking water sources.
 - Outbreak of water related diseases.
 - Improper use of workplace water.
 - Water flooding and destruction or contamination of workplace facilities.
- Develop a transparent system for reporting events to the local authorities.



Module 1: Water
Employers' Checklist

E.1.1	Are transparent communications with public water authorities or private water providers in place to ensure that water is provided by an officially approved source?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.1.2	Are drinking water facilities provided that contain potable water, and that meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.1.3	Is appropriate water provided for personal and workplace hygiene? Does water provision meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.1.4	Are effective drainage control strategies in place? Are water-related OSH risk management strategies in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.1.5	Is information on hydration needs, access to safe water and water-related risks integrated into workplace training?	<input type="checkbox"/> Yes <input type="checkbox"/> No



	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.1.6	Is there a reliable and transparent system in place to record and report water-related occurrences, incidents, diseases and accidents?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?





WORKERS' ACTION MANUAL: WATER

Workers, workers' representatives, and workers' organizations have long recognised the need to contribute to the promotion of OSH and the protection of worker safety, health and well-being. Through collective bargaining, information sharing, consultations and negotiations with employers, workers and their organisations have enhanced social dialogue in numerous sectors. Access to key WASH provisions at work, including safe water, is also an area of OSH that can greatly benefit from social dialogue processes. The Checkpoints below provide key action areas where workers and their organisations can help achieve access to fundamental rights at work, including safe drinking water and control of water-related risks, in order to maintain safer working environments.



Checkpoint W.1.1. Use and maintain drinking water facilities appropriately, and comply with workplace rules on hydration

Why?

Potable drinking water provisions are the responsibility of your employer. In turn, following workplace rules on hydration, as well as the use and maintenance of drinking water facilities will keep you safe, healthy and productive. Ensure that your actions do not have an adverse impact on water quality in order to protect the health of all your colleagues.

How?

- Stay informed on workplace rules on hydration management and the use and maintenance of drinking water facilities.
 - Attend trainings provided by your employer or by your workers organization.
 - Ask your supervisor if you are unclear about workplace rules.
 - Encourage young and new workers to develop safe hydration habits.
- Sensitize other workers that may be at greater hydration related risks, such as workers with disabilities.
- Drink water regularly, even if you aren't thirsty. Remember that once you feel thirsty, you may already be dehydrated.
- Choose water as the beverage to maintain hydration. Drinks with high sugar content or caffeine may promote dehydration.
- Do not drink alcohol while working or immediately before working.
- Use drinking water facilities for the purpose for which they were designed.
- Use clean personal drinking vessels, such as cups. Do not share them to avoid contamination.
- Refer to the appropriate table on drinking water according to work sector in the Introduction.



Reminder: Monitoring dehydration

When working in hot or physically demanding activities, sweating is a normal biological process to maintain body temperature. However, extensive sweating can quickly lead to dehydration. Lack of access to constant drinking water supply, such as in the road-transport sector, may require special precautions against dehydration. Signs to look out for, as they may indicate dehydration, include:

- ▶ Increased thirst
- ▶ Dark urine, or passing less urine than usual
- ▶ Sharp decline in weight in a short period of time
- ▶ Weakness and dizziness
- ▶ Confusion

For more information about hydration and working in hot environments, see [Temperature at Work - heat. A guide for safety representatives from the Trades Union Congress \(TUC\)](#).



Checkpoint W.1.2. Use and maintain water facilities for personal and workplace hygiene, and comply with workplace rules on water use

Why?

Access to water in the workplace is essential not only for drinking, but also for other needs such as washing, cooking and cleaning. By following workplace rules on water use, each worker can help maintain a safe and healthy working environment for all workers.

How?

- Stay informed of, and follow, the specific workplace rules set out by your employer on water use, and for water facilities.
- Use only approved washing areas for handwashing and personal cleaning to ensure that water is potable and safe for use.
- Do not wash workplace material or equipment in personal washing areas to avoid contamination.
- Use potable water for all cooking needs, including washing of foods, utensils and cooking materials, and for cooking foods.
- Follow workplace rules on using water for cleaning and laundering.
- Refer to the appropriate table on water use according to work sector in the Introduction.



Checkpoint W.1.3. Comply with workplace rules on water drainage, vector control and working safely in and around water.

Why?

Water at the workplace and OSH extends beyond water for drinking and cooking needs. Water can also pose a health risk when it is contaminated, or when it is a breeding ground for insects that carry disease.

How?

- Stay informed of, and follow, the specific workplace rules on water drainage and vector control. For example:
 - Eliminating on-site vector habitats, such as empty buckets, tires, or other containers that can be a breeding area for mosquitos and other insects.
- Stay informed of, and follow, the specific workplace rules on working safely in or around water. This may include special precautions based on your work activity or work sector. Risks may include:
 - Waterborne illnesses, such as schistosomiasis in standing water
 - Drowning
 - Electrocutation



Checkpoint W.1.4. Monitor and report water-related risks

Why?

All workers have the right to safe water at the workplace, and to protection from water-related risks. With this right comes the responsibility of monitoring OSH risks as they relate to water, and reporting them before they become problems. Active monitoring and reporting supports a workplace culture of prevention, and may decrease the risk of accidents and illnesses.



How?

- Be aware of workplace conditions that pose a water-related health risk. For example:
 - Drinking water facilities that are broken.
 - Drinking water facilities that are unhygienic or contaminated, such as open water containers.
 - Changes to the taste or appearance of drinking water.
 - Changes in the normal appearance, taste or odour of a drinking-water supply may mean changes in the quality of the raw water source or deficiencies in the treatment process, and should be investigated.

- Be aware of improper use of drinking water and other water facilities and non-compliance by other workers. For example, workers that:
 - Do not use personal drinking vessels.
 - Contaminate drinking water sources, for example, by washing PPE in areas that are not approved.
 - Use non-potable water for cooking needs, especially if those foods are shared between workers.

- Report to a supervisor any situation or behaviour that may pose a water-related risk. Remember that risks can be potential (may cause a health concern in the future if not remedied) or actual (risks that are actively causing a health concern).



Reminder: The Importance of Social Dialogue

Developing a culture of prevention at the workplace is neither a one-step nor a one-sided process. Workplace safety, particularly when it comes to WASH provisions, demands **active and effective social dialogue** between employers, and workers (including workers representatives, workers' organisations and trade unions). Social dialogue can consist of information sharing, consultations, and negotiations on key WASH issues, especially those that are particularly relevant to a certain work sector or occupation.

Workers' organisations have long recognised the need to contribute to OSH measures at the workplace. Collective bargaining, as part of social dialogue, is one of the central strategies of workers' organisations to promote safe workplaces. As advocacy organisations, trade unions are in a position to disseminate knowledge and take direct action to influence labour law and practices as they relate to WASH provisions. Due to their vertically integrated structure, they provide a unique link between the global, national and local level, allowing sustainable change and workplace improvement. In addition, trade unions are well placed to work directly at the enterprise level and take direct action to provide trainings and resources on the importance of WASH at work.



**Module 1: Water
Workers'; Workers' Representative; and Workers'
Organization Checklist**

W.1.1	<p>Are drinking water facilities being used properly? Is there compliance with workplace rules on hydration, use of, and maintenance of drinking water facilities?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
W.1.2	<p>Are water facilities being used properly for personal and workplace hygiene needs? Is there compliance with workplace rules on the use of water facilities?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
W.1.3	<p>Is there compliance with workplace rules on water drainage and control of water-related risks?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
W.1.4	<p>Is active monitoring and surveillance of water-related risks and behaviours by workers in place?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?



MODULE 2

SANITATION



© UN Photo/Tobey E.



MODULE 2: SANITATION

What is sanitation at the workplace?

- ❑ Sanitation at the workplace refers to the provision of facilities and services for the safe disposal of human excreta, menstrual hygiene products, and workplace waste.
- ❑ Workplace sanitation is a comprehensive term that means more than just toilets. It also refers to the maintenance of hygienic conditions, through the proper use and cleaning of toilets, through services such as wastewater and faecal sludge management, solid waste collection, as well as through the promotion of individual employee sanitation behavior, including the proper use of toilets and prevention of open defecation.
- ❑ Sanitation also encompasses interventions that reduce human exposure to diseases by providing a clean environment in which to work. It involves both behaviors and facilities, which work together to form a hygienic workplace.

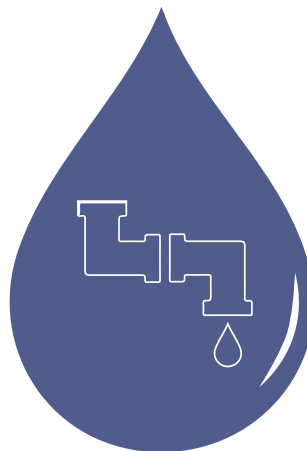
Contents of this module

This module presents the principles of sanitation at the workplace and explains the importance of maintaining sanitary conditions to protect worker's health. The aim of the Training Guide is to inform governments, employers, and workers alike on the following topics:

Guide 2.1. **Sanitary facilities**



Guide 2.2. **Wastewater and faecal sludge management**



Guide 2.3. **Solid waste management**



GUIDE 2.1. SANITARY FACILITIES

Why are sanitary facilities important?

Sanitary facilities, such as accessible toilets, are essential needs for all human beings. Sanitation has been recognized as a universal human right; however, many people around the world do not have access to toilets, and therefore go in the open – a practice known as open defecation.

Human excreta contain germs that can cause illnesses and diseases. When people become infected with these germs, their excreta will contain large amounts of the germs that have the potential to cause disease in others who have contact with it.



Sanitation related diseases (examples, not limited to):

- ▶ Diarrhoea
- ▶ Dysentery
- ▶ Cholera
- ▶ Hepatitis E
- ▶ Hepatitis A
- ▶ Typhoid Fever
- ▶ Polio

Source: World Health Organization (2015). Sanitation, Fact sheet N392.

The diseases caused by contact with human excreta can be serious and life threatening. For example, diarrhoea remains a major killer of children and adults around the world, but is largely preventable.



Key facts on open defecation

- ▶ Open defecation perpetuates a cycle of disease and poverty.
- ▶ The countries where open defecation is most prevalent have the highest number of deaths of children under 5, and the highest levels of malnutrition and poverty.
- ▶ 1 in 7 people, or 946 million people, practice open defecation, including in street gutters, behind bushes or into open bodies of water.
- ▶ Nine out of 10 people who practice open defecation live in rural areas. But the number of people defecating in the open in towns and cities is increasing as more people move to urban places and toilet facilities are not increased.
- ▶ Open defecation exposes people, particularly women and children, to potential harassment and violence.
- ▶ Open defecation poses additional challenges for women and girls who are managing their menstruation without safe facilities.

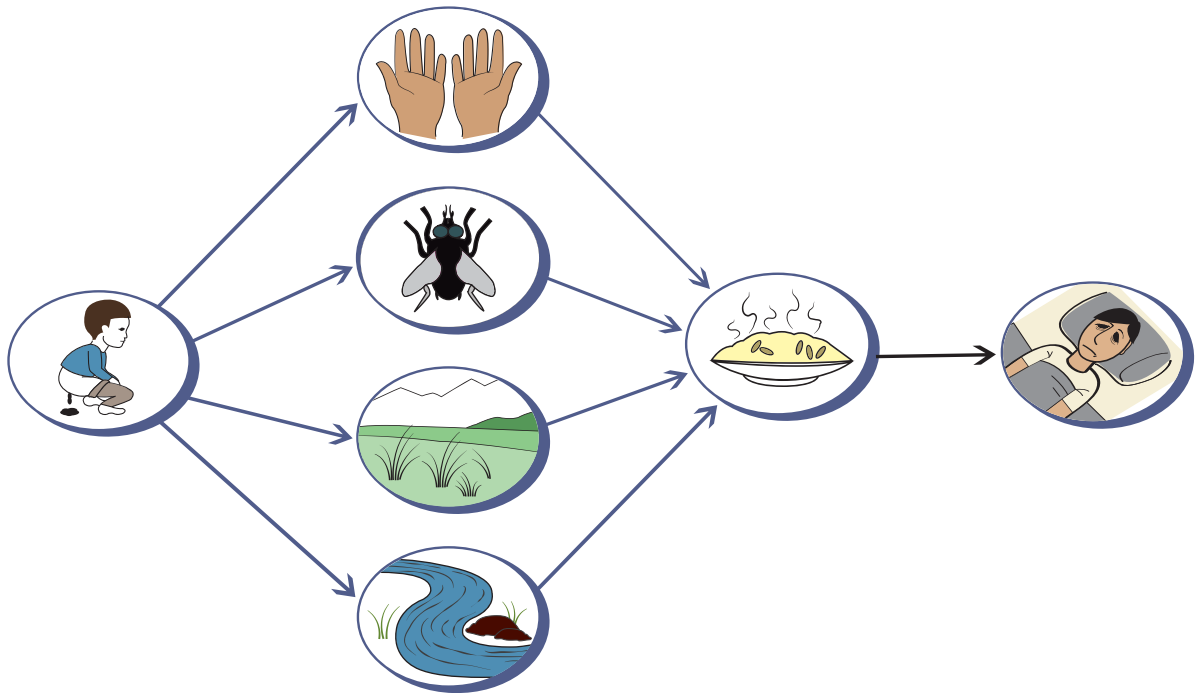
Source: World Health Organization (2015). Sanitation, Fact sheet N392.

Germs in excreta can infect others in different ways. For example:

- **Fluids:** Excreta may be washed away by rain and run into wells and streams, thereby contaminating water used for drinking.
- **Fingers:** Fingers or hands that haven't been washed after going to the toilet can contain germs. These unclean hands can transmit germs onto foods, which are then eaten; or to other people when shaking hands.



Figure 2.1.1. F-DIAGRAM.



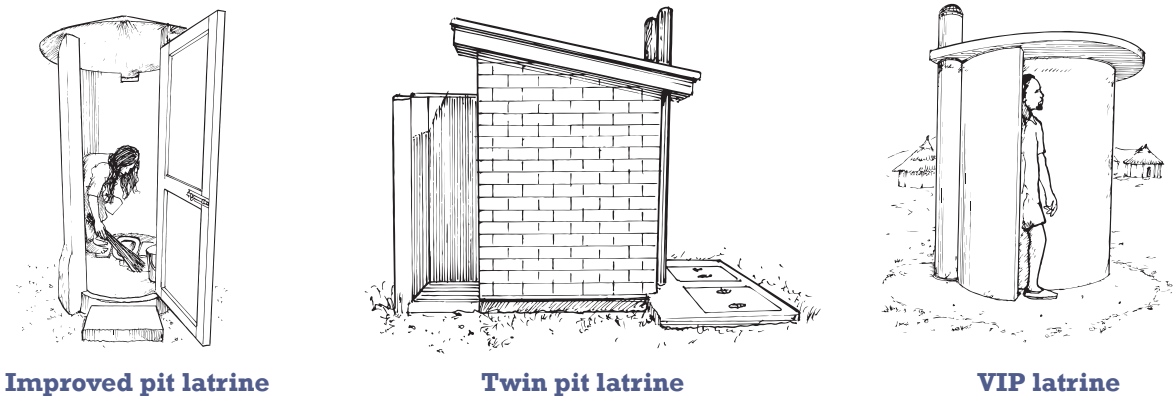
This diagram is known as the F-diagram because all germ paths of faecal and oral contamination start with the letter F. Adapted from Wagner, E. G., and Lanoix, L. N. (1958). *Excreta disposal for rural and small communities*. WHO, Geneva, Switzerland p. 12."

- ❑ **Flies:** Flies and other insects may feed on the excreta and carry small amounts of it and its germs away on their bodies. When flies or insects touch water or food, the germs may be passed on, potentially infecting the person drinking or eating.
- ❑ **Floors/fields:** Germs can spread onto floors and seep into fields and crops and other sources of food if excreta are not disposed of properly.

What type of toilets are there?

In basic terms, there are two types of toilets: "improved" or "unimproved" toilets. An improved toilet is one that *hygienically separates human excreta from human contact*. An unimproved toilet is simply one that does not. To protect human health, improved toilets are needed (Table 2.1.1).

Figure 2.1.2. Excreta disposal.





Improved pit latrine

Twin pit latrine

VIP latrine



Table 2.1.1. Types of sanitary facilities.

	Type of facility	Definition
IMPROVED SANITATION 	Flush toilet	Uses a cistern or holding tank for flushing water, and a water seal (a pipe below the seat or squatting pan) that prevents the passage of flies and odours. Sewage is disposed of by piped sewage system or septic tank.
	Pour-flush toilet	Uses a water seal, but unlike a flush toilet, a pour flush toilet uses water poured by hand for flushing (no cistern is used). Sewage is disposed of by piped sewage system or septic tank.
	Pour-flush latrine	A type of pit latrine where small volumes of water are used to flush excreta into a pit. They are most appropriate where people use water to clean themselves after defecating and where people have access to reliable water supplies close to the home. The pit is usually connected to an area where liquids infiltrate the soil, leaving solid waste to decompose.
	Ventilated improved pit latrine (VIP)	A dry pit latrine ventilated by a pipe that extends above the latrine roof. The open end of the pipe is covered with mesh or fly-proof netting and the inside of the superstructure is kept dark. It is designed to be a dry system, and is most appropriate where people do not use water for cleaning themselves after defecating, but use solid materials such as paper or leaves. Excreta infiltrates the soil, leaving solid waste to decompose.
	Pit latrine with slab	A dry pit latrine where the pit is fully covered by a slab or platform that is fitted either with a squatting hole or seat. The platform should be solid and can be made of a material (concrete, cement, etc.) that covers the pit without exposing the pit content, other than through the squatting hole or seat. Excreta infiltrates the soil, leaving solid waste to decompose.
	Composting toilet	A dry toilet into which carbon-rich material (grass, sawdust, ash, etc.) are added to the excreta and special conditions maintained to produce inoffensive compost.
UNIMPROVED SANITATION 	Pit latrine without a slab	Uses a hole in the ground for excreta collection and does not have a squatting slab, platform or seat. An open pit is a rudimentary hole.
	Bucket or other open container	The use of a bucket or other container for the retention of human excreta which are periodically removed for treatment, disposal, or used as fertilizer.
	Hanging toilet or hanging latrine	A toilet built over the sea, a river, or other body of water, into which excreta drops into directly.
	No facilities (open defecation)	Includes defecation into the bush/field/surface water; excreta deposited on the ground and covered with a layer of earth; or excreta wrapped and thrown into garbage.

Source: WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation. *Improved and unimproved water sources and sanitation facilities*. 2015.



Reminder: Proper hand hygiene is essential for sanitation!

Improved toilets are just one part of how to stay healthy and free from disease-causing germs. Proper hand-washing techniques after using a toilet are also necessary. You can read more about this in Module 3 (Hygiene).

What about toilets at work?

The need for toilets at work seems obvious, and represents a basic human right, yet it still tends to be neglected. No matter in what country, or in what sector people work, employers are responsible for providing an improved sanitary facility that allows workers to safely and discretely take care of their business - including for women to manage their menstrual hygiene needs - without harming their health, or the health of others.

While governments and competent authorities are responsible for setting laws about toilets and their management at work, employers are responsible for providing and maintaining the toilets. In certain situations, employers are also responsible for the provision of living accommodation for workers, in which case, also includes proper toilets. In turn, workers are responsible for the proper use of toilets to protect their own health, the health of their fellow workers and nearby communities.



Clean and safe toilets, along with handwashing facilities and habits, are prerequisites for health, dignity and privacy at work.

What about different types of workers?

While all workers deserve access to improved sanitary facilities, there are some groups of workers that demand special considerations.

- ▶ **Women and adolescent girls.** Menstruation is a taboo subject in many communities and cultures, and this clearly extends to the workplace. Not having a safe and private space to change soiled products can cause health risks such as infections, as well as the mental health concerns of anxiety, stress and reduction of morale. Not being able to manage menstruation-related sanitation at the workplace could lead to missed hours or days at work and decrease productivity.
- ▶ **Pregnant women.** Pregnant women may need to use the toilet more frequently and may therefore need more time for toilet breaks during the workday. Without frequent toilet breaks, workers, and especially pregnant woman, can develop health problems.
- ▶ **People with disabilities.** Workers with disabilities may have different needs for accessing toilets. Worksite design is a crucial stage to consider adequate and safe toilet access for disabled workers. Sanitary facilities should be designed, built and located in a way that makes them easily accessible and easy to use by people with disabilities. Barriers that may exist include steps at the entrance to sanitary facilities, absence of handrails, lack of adequate light, narrow doors and minimal space to turn wheelchairs or use crutches, and sanitary facilities that are located far away from the workplace.
- ▶ **Ill or immunocompromised persons.** Workers with HIV/AIDS and other immunocompromised persons may be more likely to get sick from germs at the workplace related to poor sanitation. Human excreta may also spread germs of ill workers to healthy workers. Special attention should be paid to sanitary facilities for ill people, and the workplace should be made safe so that all people working together are kept safe and healthy.



- ▷ **Migrant workers.** Migrant workers are often vulnerable due to their distance from their homeland, potential difficulties with language, and lack of access to health and social services. The workplace should be sensitive to migrant worker sanitation needs particularly in regards to cultural considerations (e.g., gender-segregation of facilities, anal cleansing materials). Migrant workers may also be dependent on workplace accommodation, which also includes the right to sanitary facilities.
- ▷ **Young or new workers.** Young workers may be less knowledgeable about the health risks related to using toilets. They may also have less experience in properly using toilets and may be at greater risk for contracting an illness or disease. New workers may not have proper understanding of workplace layout, or of regulations, when it comes to using toilets.
- ▷ **Aging workers.** Older workers may have special needs when it comes to using sanitary facilities. Considerations should be made in the case of worker incontinence, such as the provision of more frequent toilet breaks and workplace guidance for incontinence management. Accessibility to toilets should also be considered for aging workers, who may suffer from vision and auditory decline, as well as limited mobility, range of motion, and joint movement.

What about different work sectors?

Workers in all sectors deserve access to improved toilets. However, as each work sector differs, so may the need for specific details about access to toilets.



Reminder

Various ILO instruments give guidance for toilets according to sector. For information about your specific sector, see the corresponding Table in the Introduction.



Take away point

Providing, maintaining and properly using toilets at work can significantly improve workers' health and welfare. Morale of workers will be increased if they are aware that their workplace contains safe toilets and their potential for illness and disease is decreased. Finally, providing proper toilets reduces the risk of worker illness, disease and mortality, thereby enhancing worker productivity across all industrial sectors.

Figure 2.1.3. Toilet for people with disabilities.





GUIDE 2.2. WASTEWATER AND FAECAL SLUDGE MANAGEMENT

Why is wastewater and faecal sludge management important?

The aim of the improved sanitary facilities described in Guide 2.1 is to separate human excreta from human contact. This human excreta must go somewhere, and properly managing it by eliminating contamination with the environment is essential for human health.

Safe management of excreta is essential for both workers as well as local communities. Excreta management can be accomplished in many ways, some requiring water, others requiring little or none. Regardless of method, safe management of excreta is one of the principal ways of breaking the faecal–oral disease transmission cycle. Sanitation is therefore a critical barrier to disease transmission.



Terminology: Faecal sludge

1. Faecal sludge is the term used to describe human excreta collected in on-site sanitation systems, such as latrines, non-sewered public toilets, and septic tanks. Septage, the faecal sludge collected from septic tanks, is included in this term.



Terminology: Wastewater

2. Wastewater is an encompassing term, and includes:

- ▶ Blackwater, or sewage: Human urine and faeces
- ▶ Greywater, or sullage: Used water sources from cooking, washing and bathing.

Wastewater is often mixed with water for flushing and moves from toilets through piped, sewerage systems.

Improved vs. Unimproved sanitation

Just like for toilets, there are “improved” and “unimproved” methods for sanitation management. Improved methods are defined as those that hygienically separate human excreta from human contact, and are crucial for reducing disease in the workplace and in surrounding communities.



Table 2.2.1. Improved methods for sanitation management

Type of method	Description
Off-site: 'Conventional' sewerage	System of sewer pipes (i.e., sewerage) that is designed to collect wastewater and remove it from the household or workplace. Sewerage systems require water for flushing waste away. Sewerage networks are expensive and demand extensive planning and construction, and good operational management.
Off-site: Simplified sewerage	Characterized by smaller diameter pipes buried at a shallower depth than those used in conventional sewerage networks.
Mixed: Settled sewerage	Designed for moving the greywater component of wastewater after the solids have settled in a septic tank (see below).
On site: Septic tank	On-site sanitation system that provides the convenience of a sewerage system, and collects the sewage and waste water from toilets in a holding area, usually below ground. Requires periodic emptying and must be accessible to a vacuum tanker.
On-site, un piped: <ul style="list-style-type: none"> ▶ Flush/pour flush to pit latrine ▶ Dry pit latrines (VIP, or with slabs) ▶ Composting toilets 	In on-site systems that are un piped, excreta is stored in a hole in the ground or in a protected and covered leaching pit; or in composting material (for composting toilets), where it can decompose. Full latrines are often covered and safely abandoned, with a new pit being constructed elsewhere. To be considered improved, the on-site system must hygienically separate human excreta from human contact, and must not allow for contamination of the local environment. In urban or densely populated areas, or areas with high water tables, on-site systems may not be adequate.

Source: WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation. *Improved and unimproved water sources and sanitation facilities*. 2015.

Unimproved sanitation, in regards to excreta management, is when:

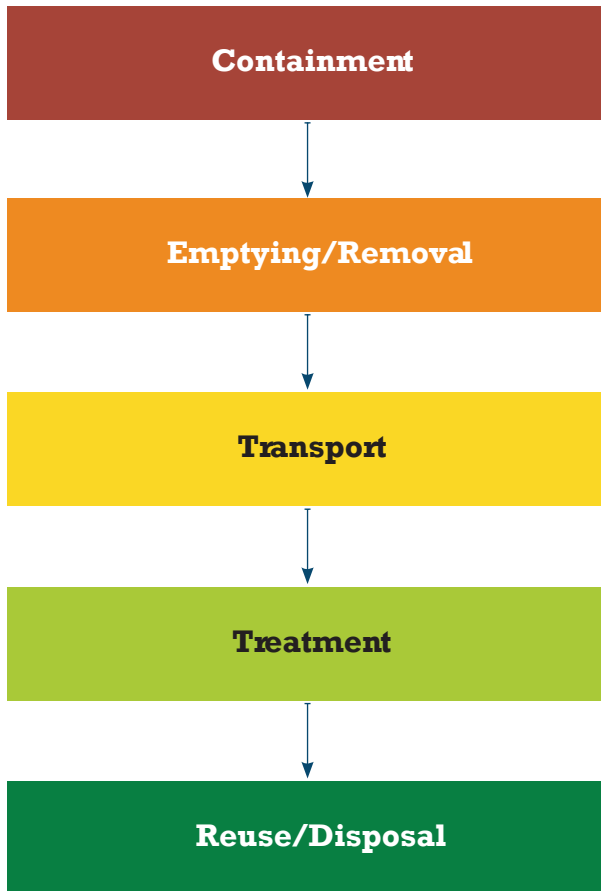
- ❑ there is a flush/pour flush or release of excreta to elsewhere other than what is presented in Table 2.2.1.
- ❑ excreta is deposited in or nearby the household or workplace environment (not into a pit, septic tank, or sewer), or when excreta is flushed to the street, yard/plot, open sewer, a ditch, a drainage way or other location.

This is not a safe excreta management method and should be avoided to protect human and environmental health.

What are the steps in wastewater/ faecal sludge management?

The term "management" encompasses a series of steps that are necessary in ensuring that excreta do not enter and contaminate the area outside of the sanitary facility. These methods are described in the sanitation service chain (Figure 2.2.1).

Wastewater and faecal sludge management may involve the assistance of local sewage and public works authorities, as well as private services. These methods will differ based on whether an on-site (non-sewered); or an off-site (sewered) system is present.

Figure 2.2.1. Sanitation service chain.

Source: *Wastewater Management, A UN-Water Analytical Brief, 2015.*

On-site systems (i.e., non-sewered systems)

In these systems, faecal sludge accumulates on-site in a pit or septic tank, which requires periodic emptying or re-siting. In the case of emptying, faecal sludge is taken away for treatment and/or disposal.

- **Latrines:** Latrines store and/or treat faecal sludge at the point of generation. Faecal sludge requires treatment before disposal, so that local water sources are not contaminated and communities are not exposed to health risks from untreated excreta. In densely populated areas, off-site treatment may be necessary, which involves emptying/removal and transport by local public works departments or service providers.

- **Septic tanks:** These systems require periodic emptying/removal by vacuum tankers, followed by off-site treatment towards reuse or disposal.



Key resources: Faecal sludge management

Where on-site systems are poorly managed, faecal sludge can accumulate or overflow and be discharged into local water sources. Where pit emptying services exist they are often unregulated, which may result in illegal faecal sludge dumping. Those in charge of on-site systems need to know how to properly manage faecal sludge due to the risk of contamination. To promote risk assessment and risk management when it comes to faecal sludge, the WHO has published key resources for stakeholders:

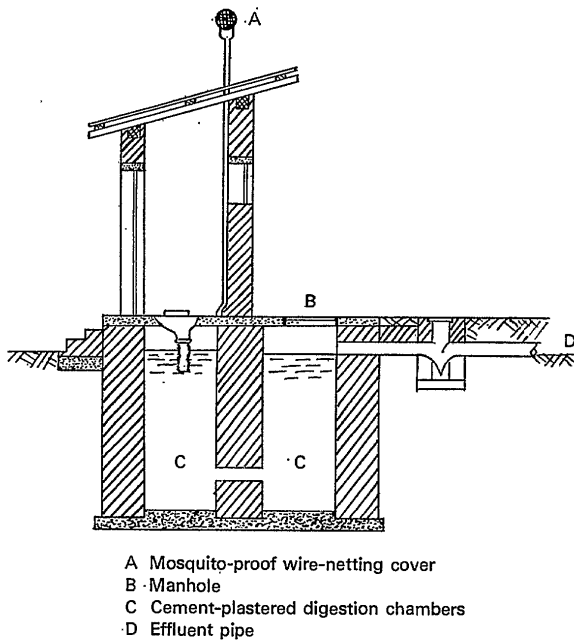
- ▶ [Guidelines for the safe use of wastewater, excreta and greywater](#)
- ▶ [Information kits on using human waste safely.](#)

Off-site systems (i.e., sewerred systems)

In off-site systems, sewer networks remove and transport wastewater from toilets through a pipe system. Pumping stations are sometimes needed to ensure that the waste reaches the treatment or disposal point.

- **Flush toilets:** Sewerage systems connected to flush toilets are designed to collect wastewater and transport it away from homes to a treatment and/or disposal point. All sewerage systems must be connected to a treatment plant, as human excreta represents a public health risk before it is treated. Therefore, sewerage is a high-cost sanitation option, which requires funds for operation and maintenance by trained services who can ensure that wastewater is taken away from the workplace, treated and reused/disposed of in the correct way.

Figure 2.2.2. Typedesign for aqua privy.



Source: *Guide to health and hygiene in agricultural work*, 1979

Figure 2.2.3. Woman cleaning toilets.



What are considerations for the workplace?

Wastewater management systems at the workplace must be locally appropriate. Decisions on the approach within that system should be context-specific, and should be based on the local environment (temperature, rainfall), culture, and resources (human, financial, material and spatial).

In order to accomplish improved sanitation, governments must approve of and monitor sanitation services with local public works departments and private actors. Employers should ensure they have improved systems for wastewater and faecal sludge management, and coordinate with local public works departments and private services to ensure that technical support is provided. Workers should be aware of improved sanitation efforts and actively monitor their workplace for sanitary risks.



Take away point

Providing, maintaining, and properly using sanitary facilities is not enough to protect worker health. There must also be improved methods for wastewater and faecal sludge management at the workplace. This includes active coordination with local public works departments and/or private service providers.



GUIDE 2.3. SOLID WASTE MANAGEMENT AND DISPOSAL

Why is solid waste management important?

Waste is essentially garbage. It includes all the materials that are no longer necessary and are therefore thrown away. When waste is not managed and disposed of properly, it can pose a risk to human health. For example:

- ❑ **Scavengers:** Flies, rats, dogs, snakes and other scavengers are attracted to garbage, particularly in hot climates. Some scavengers can cause injuries, like bites, or carry and spread disease.
- ❑ **Water contamination:** Waste that is not disposed of properly can be washed away by rain and go into local rivers and streams. This may lead to groundwater and well contamination. If people and local communities use this water afterwards, it may cause illness or disease, and general environmental contamination.
- ❑ **Fire and smoke:** Piles of garbage present a fire risk and smoke can also be a health hazard if the burning waste contains items such as plastics or chemicals.
- ❑ **Vector-borne disease:** Garbage disposed of in storm drains may cause blockages or collect water and encourage fly and mosquito breeding, which can cause the spread of malaria, dengue and yellow fever.

What about at work?

Workplaces generate many different types of wastes. Some workplace waste can be dangerous, and could pose a health risk to workers and employers. The build-up of waste can lead to smells and can be unsightly. This can lower the morale of workers, reduce overall productivity and cause pest or health problems. One type of workplace waste is sewage from toilets, which was

described in Guide 2.2. Other workplace wastes include:



Zoonotic diseases (examples)

- ▶ Anthrax
- ▶ Avian flu
- ▶ Brucellosis
- ▶ Cryptosporidiosis
- ▶ Rabies
- ▶ Trichinosis
- ▶ Tuberculosis

Source: Safety and health in agriculture: an ILO code of practice (2010).

Animal-related wastes

- ❑ Animal and bird production may involve exposures to animal wastes such as carcasses, animal hides, manure and waste slurry.
- ❑ Work with animals may also involve dangerous exposures to gases like ammonia and methane.
- ❑ An important risk factor is exposure to the germs passed by animals to humans (zoonosis). Many diseases can be passed between animals and humans, and may result in severe health problems or death.

Sharps and medical waste

- ❑ Sharp items such as needles and broken glass are a hazard that can cause injury if not properly disposed.
- ❑ Injury from needle or sharps may cause trauma to human tissues, as well as a risk of infection from germs that can spread through the blood.



- ❑ Sharps always need their own container that safely keeps the hazard away from human contact.



European Union (EU) Framework Agreement on Prevention from Sharp Injuries in The Hospital And Healthcare Sector (2009): More than 1 million injuries occur every year from needle sticks and other sharp objects, forming one of the most common health and safety threats in the European workplace. In 2009, employers' organizations and trade unions in the healthcare sector signed an EU-wide agreement to prevent injuries from needle sticks and other sharp objects.

Menstrual materials

- ❑ Used menstrual materials must be disposed of in a sanitary way to reduce exposure with biological liquids. Separate bins should be provided within toilet cabins that have a tight fitting lid. Bins should be lined with plastic or other appropriate bags to protect others from coming into direct contact with soiled products.
- ❑ Disposal must be discrete, and separate from other disposal units, so that girls and women are comfortable to manage their menstruation needs at the workplace without fear and shame.
- ❑ Menstrual waste should be treated as biological/medical waste during collection and solid waste disposal.

Hazardous solid wastes

- ❑ Some work materials can be toxic for human health, and must be disposed of so that they do not contaminate the workplace nor the local environment.
- ❑ Examples include: toxic paints and solvents, asbestos and asbestos-contaminated materials, radioactive materials and explosives.

Hazardous liquid wastes

- ❑ Hazardous liquids wastes, sometimes known as effluent, are a concern for human health due the ease at which they can be released into the environment.
- ❑ Left over pesticides and pesticide contaminated water and other liquids should be treated as hazardous materials, and disposed of according to the rules laid out by authorities.



International instrument on chemical safety: The Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Annex 4 provides guidance on chemical safety data sheets and the provision of information to the workplace audience. These chemical data sheets should include toxicological information, management and disposal considerations, and regulatory information.

For more information, see: Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Rev.6 (2015)

While attention is often brought to exposures to dangerous materials at work, what happens with these materials after they are used is sometimes forgotten. The important thing to remember is to minimize or eliminate contact between people and the waste until it is taken away from the workplace and disposed of properly.

The disposal of workplace waste normally involves the help of local garbage collection services, public works departments or service providers. The aim is to safely remove the waste from the workplace or surrounding area, and deal with it in the appropriate ways.

Safe waste disposal is the responsibility of governments, employers, and workers. Governments should approve of and monitor waste disposal services with local public works departments. Employers should follow rules for waste disposal set by the competent authority and coordinate with local services for waste disposal. In turn, workers should comply with rules laid out by the employer and monitor their workplace for waste-related risks.



What about waste in different sectors?

Because different workplaces generate different types of waste, stakeholders should understand what types of wastes are hazardous in their sector, and how to dispose of them properly.



Reminder

Various ILO instruments give guidance for waste management and disposal according to sector. For information about your specific sector, see the corresponding Table in the Introduction.



Take away point

Sanitary methods of waste disposal that eliminate human contact with hazardous materials keeps workers safe and healthy, increases morale and may promote workplace productivity

Figure 2.3.1. Rubbish collection on a construction site in the suburb of Cairo.



Figure 2.3.2. Waste water treatment plant called SILOE and which was created by an association (SILA) gathering different councils around the Annecy lake.



Figure 2.3.3. Drying beds at Niayes faecal sludge treatment plant, Dakar, Senegal.



© Strande L.





GOVERNMENT ACTION MANUAL: SANITATION

Governments are essential in promoting access to improved sanitation at the workplace through their policy making and supervisory roles. This Manual provides checkpoints on how governments can mainstream workplace access to improved sanitation into their existing OSH frameworks, and how they can develop new initiatives as needed.



Checkpoint G.2.1. Integrate considerations for improved sanitation into OSH policies, systems and programmes

Why?

Ensuring that improved sanitation provisions at the workplace are integrated into national policies and campaigns will strengthen preventative safety and health culture and reduce sanitation-related risks at work. Governments are in a unique position to mandate, and also to promote, improved workplace sanitation. Remember that improved worker health contributes to strong and productive societies and economies.

How?

- Promote the development of preventative safety and health culture with sanitation-specific policies, programmes, systems and campaigns. This may include initiatives on:
 - Elimination of open defecation at the workplace.
 - Promotion of improved sanitary facilities at the workplace.
 - Rights of at-risk workers for sanitary facilities. For example, campaigns to promote the rights of women and girls at the workplace for MHM.
 - Promotion of safe workplace waste disposal to protect local communities.

- Develop objectives, targets and indicators of progress for improved sanitation at work.
 - For example, start a campaign with the objective to eliminate all open defecation in agricultural enterprises. Monitor indicators of progress and share them in national campaigns.
- Dedicate funding/budgets to allow for sanitation promotion in workplace and for ensuring adequate facilities, and their maintenance.



Case Study: The Government of India takes action

India has the largest number of people still defecating in the open: more than 564 million. The Government of India is committed to ending open defecation. The government has a target to make India "Open Defecation Free" by 2019 and UNICEF India is a key partner in its flagship programme to achieve this target. For more information on how governments can develop campaigns for improved sanitation, see: <http://unicef.in/Whatwedo/11/Eliminate-Open-Defecation>



Checkpoint G.2.2. Establish and enable laws for improved sanitation at work

Why?

Governments should adopt laws for the provision of toilets and for the disposal of wastewater/faecal sludge and solid waste. This way, they are able to promote the reduction of hazardous exposures and protect the health of all workers across different employment sectors.

How?

- The competent authority should develop and periodically update statutory provisions on sanitation-related needs at the workplace. This should include laws on:
 - The number of sanitary facilities necessary at the workplace, taking into account separate provisions based on gender, as well as accessibility for people with disabilities.
 - The type of sanitary facility, while taking into account local and religious customs.
 - The maintenance and cleaning of sanitary provisions facilities at the workplace, including training and protection of cleaners/maintenance workers.
 - Methods of wastewater/faecal sludge management based on sanitary facilities and local conditions available.
 - Methods of solid waste disposal taking into account the relevant sectors, including, but not limited to:
 - Pesticides and other agrochemicals
 - Animal wastes, such as manures and waste slurry
 - Toxic paints and solvents
 - Medical and biohazard waste
 - Asbestos and asbestos-contaminated materials



Key resource

Government stakeholders may want to consult the WHO's recommendations for Sanitation Safety Planning (SSP): a step-by-step risk based approach to assist in the implementation of the 2006 WHO Guidelines for Safe Use of Wastewater, Excreta and Greywater. The approach can be applied to all sanitary systems to ensure the system is managed to meet health objectives.



Reminder: Focus on at-risk populations

When developing laws for sanitary facilities, governments should pay particular attention to WASH at work aspects that concern at-risk populations. A key example is regulations for MHM at work. In some countries, the basic human rights or menstruating girls or women at the workplace are overlooked, forgotten, or have yet to make progress on political agendas. Ensuring that policies concerning MHM at work are developed and implemented are key steps towards the empowerment of girls and women worldwide.



Checkpoint G.2.3. Approve and monitor sanitation services for wastewater/faecal sludge and solid waste management

Why?

After making laws for sanitary provisions, there needs to be a transparent process in which the competent authority approves the sanitation services for wastewater/faecal sludge and solid waste management. Without oversight and approval for the actions of local public works departments, many workplaces would lack improved sanitation methods.

How?

- Hold consultations with regional and local public works departments, sewage and waste disposal authorities, environmental health services, as well as service providers, to assess the proper functioning of sanitary services at workplaces.
- Ensure adequate resources for the proper functioning of improved sanitation services reduce risks of environmental contamination.



- Provide training as needed to ensure sanitation services understand the risks of poor sanitation and need for improved sanitation.
- Monitor sanitation services to ensure consistency in improved sanitation methods.



Checkpoint G.2.4. Inspect sanitary provisions at work

Why?

Labour inspection is a key area of the labour administration system and plays a crucial role in monitoring sanitary provisions at the workplace. If there is a law on the number and type of toilets necessary in a specific work sector, the only way to supervise and monitor whether employers have provided them properly is to conduct an inspection.

How?

- Provide training on improved sanitation provisions and procedures for labour inspectorates. Ensure that you capture specificities by sector by referring to the corresponding Table on ILO instruments in the Introduction. Practical guidance for training topics include:
 - Definitions of improved sanitation, both for toilets and wastewater/faecal sludge management.
 - The type of toilets that should be provided.
 - The number of toilets provided per person, including considerations by gender, and accessibility.
 - Methods of toilet maintenance and cleaning.
 - Methods for improved wastewater/faecal sludge management.
 - Methods for solid waste management.
 - At-risk worker groups, particularly issues of MHM.

- Promote prevention policies on sanitary risks in labour inspection by:
 - Providing technical assistance to social partners on provision and use of toilets, and on wastewater/faecal sludge management.
 - Carrying out planned inspection visits for educational purposes to discuss the need for improved sanitation.
 - Assessing plans with employers for the design and development of sanitary facilities.
 - Promoting awareness raising campaigns for improved sanitation.
- Enforce the application of sanitation laws at work, using sanctions as needed to promote the protection of workers from sanitation risks. This includes:
 - The provision of the correct number, type and standard of toilets.
 - The maintenance of toilets.
 - Wastewater/faecal sludge management.
 - Solid waste management.



Module 2: Sanitation
Government Checklist

G2.1	Are considerations for improved sanitation integrated into OSH policies, systems and programmes? (including considerations for toilets, MHM, wastewater/faecal sludge management and solid waste management?)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G2.2	Have laws been established and enabled for improved sanitation provisions (including laws for toilets, MHM, wastewater/faecal sludge management and solid waste management?)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G2.3	Have sanitation services for wastewater/faecal sludge management and solid waste management been approved? Is there a system in place for monitoring sanitation services for wastewater/faecal sludge and solid waste?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
G2.4	Is there a system in place for training labour inspectorates on sanitation related risks, and ensuring inspections are carried out systematically?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?





EMPLOYERS' ACTION MANUAL: SANITATION

While governments are responsible for the development and oversight of sanitation laws for the workplace, the successful application of these laws is largely the responsibility of employers. Employers have a clear duty to provide and maintain toilets and arrange for the safe management of wastewater/faecal sludge and solid waste. This Manual provides checkpoints on how to organize work so as to prevent, so far as is reasonably practical, WASH-related incidents, and how to apply relevant guidelines as prescribed by the competent authority.



Checkpoint E.2.1. Provide improved sanitary facilities according to national laws

Why?

Improved toilets are essential for creating a safe and comfortable working environment for all workers, and can improve workers' health and welfare. When workers are aware that their workplace contains safe toilets that reduce their risk of disease, their morale will be increased. Providing safe toilets reduces the risk of worker illness, disease and mortality, thereby enhancing worker productivity.

How?

- ❑ Refer to the national laws for workplace sanitary facilities. These may differ by country. Practical guidelines are included in the section below.
- ❑ Develop a plan and a design for sanitary facilities ahead of time if possible.
- ❑ Review plans with the local competent authority before building to ensure the plan meets the laws in your country.
- ❑ Refer to ILO recommendations on toilet provisions for your sector in the Introduction.



Reminder: The importance of planning

Time spent on design and planning will make for a safer worksite and save money later on. It is better to be safe from the beginning, than to be sorry later. This is a fundamental rule of thumb for risk management across all sectors.

Practical guidelines for sanitary facilities

The laws in your country prescribe the type, number and standard of sanitary facilities that should be provided (including accessible toilet to standard toilet ratio). Employers should consult with the competent authority to understand the rules. Some practical guidance is given below.

- ▷ **Provide appropriate type.** Where possible, toilets with flushing systems and traps should be provided to separate excreta from human contact. Sufficient urinal accommodation should be provided for male workers. In the case of outdoor (mobile) toilets, they should have a solid, non-permeable floor and be properly roofed. Remember that cultural and social norms should be considered so that workers feel comfortable using them, and use them properly.



Reminder

A flushing system disposes of excreta by using water to flush it through a drainpipe to another location for disposal, thus maintaining a separation between humans and excreta. A trap is an "S", "U", "J", or "P" shaped bend that causes the water in the toilet bowl to collect and act as a seal against gases, thus trapping them.



Provide adequate number of gender-separated toilets. Toilet facilities should be of sufficient number based on the workplace and the number of workers. They should be gender-separated and clearly marked. Making workers wait to use the toilet due to long lines may lead to frustration, health problems and reduced productivity. Remember that the number of toilets may also be specific to your work sector (See the corresponding Table on ILO instruments in the Introduction.).



ILO Guidance for maritime industries: "In all ships a minimum of **one toilet, for every six persons or less** who do not have personal facilities shall be provided at a convenient location"

Source: Maritime Labour Convention (MLC), 2006, Title 3.

Table 2.3.1. Examples of guidance for number of toilets by national governments

National government and source	Guideline
Singapore, National Environment Agency (NEA)	For stand-alone dormitories, for example, a construction site with living accommodations: <ul style="list-style-type: none"> ▶ Men: 1 toilet, 1 urinal, and 1 bathroom with bench per 15 male workers ▶ Women: 2 toilets, and 1 bathroom with bench per 15 female workers.
United States of America, Occupational Safety and Health Administration (OSHA)	Minimum number of water closets (i.e., toilet facility) per employees for mixed use: <ul style="list-style-type: none"> ▶ 1 toilet per 1-15 workers ▶ 2 toilets per 16-35 workers ▶ 3 toilets for 36 -55 workers ▶ 4 toilets for 56-80 workers ▶ 5 toilets for 81-110 workers
United Kingdom, Health and Safety Executive (HSE)	Number of toilets for mixed use (or women only): <ul style="list-style-type: none"> ▶ 1 toilet per 1-5 workers ▶ 2 toilets per 6-25 workers ▶ 3 toilets for 26-50 workers ▶ 4 toilets for 51-75 workers ▶ 5 toilets for 76-100 workers

- ▶ **Ensure privacy.** Sanitary facilities should give suitable privacy, should be built for single occupancy, and should be locked from the inside. Privacy is an important consideration in certain sectors where women's participation has increased, and is necessary for proper MHM.
- ▶ **Ensure accessibility.** Sanitary facilities must be made accessible to all types

of workers, and must therefore take into account disability. Competent authorities should provide guidance for an accessible toilet to standard toilet ratio, and this should be adhered to.

- ▶ **Ensure adequate location.** Sanitary facilities should be located in a place where they are accessible to all workers, at all times, and at every workplace.



Making workers walk long distances to toilets is ineffective and may lead to unsanitary practices, like open defecation. But remember: toilets should not be directly next to workplaces, rest rooms or canteens, but should be separated by an open space. Remember that the location of toilets may be specific to the work sector (See the corresponding Table on ILO instruments in the Introduction.).



Guidance for mining

Don't forget that workers below ground also need to use the toilet!

“Suitable toilets above and below ground should be provided by the employer.”

Source: Safety and health in underground coalmines: an ILO code of practice. Geneva: ILO, 2006. Para 29.3

- ▷ **Ensure ventilation.** Sanitary facilities should be ventilated, either naturally or artificially, to reduce smells. If toilets are unpleasant because of smells, workers may not want to use them.
- ▷ **Ensure lighting.** Natural and/or artificial lighting should be provided for comfort and safety.
- ▷ **Provide sanitary means of personal cleaning.** Toilet paper should be provided, or any other hygienic means of cleaning. For example: a hand-held bidet sprayer when appropriate.



Reminder: Adapting to local culture

Employers should be aware of the cultural norms of workers when designing and providing sanitary facilities. Otherwise, workers may feel offended or discriminated against, and may not use toilets properly.

- ▷ **Provide adequate time and regularity for using sanitary facilities.** Providing sanitary facilities that are easily accessible is not enough to keep workers happy and healthy. They must also have the proper time to use them comfortably and to not feel pressured that they are missing work to use the toilet. Employers should be aware that the problem of incontinence (or the loss of bladder control) affects many workers, and regular toilet breaks are necessary to promote health, wellbeing and morale at work.

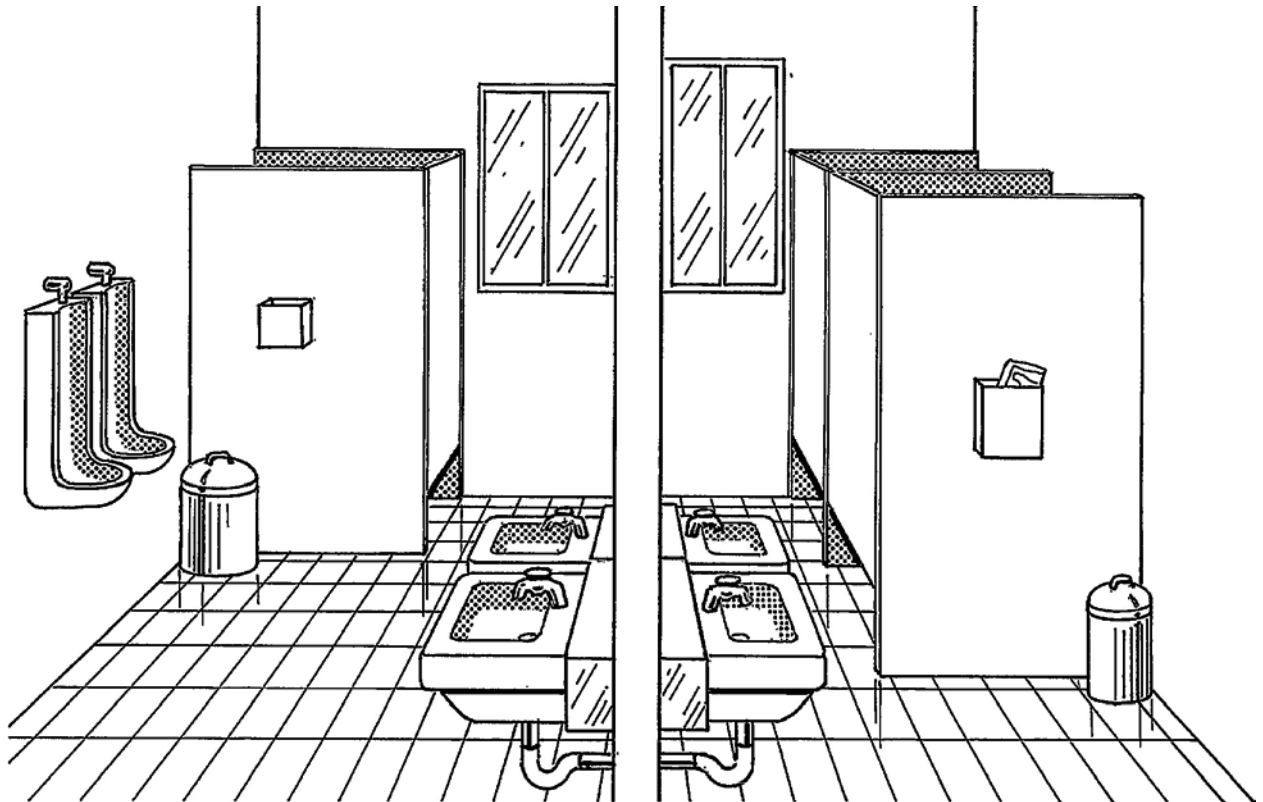


Reminder: Pregnant women

Pregnant workers may have the urge to use the toilet more frequently than other workers. Employers should be aware of this and allow pregnant workers for frequent toilet breaks as needed. Not using toilets as needed may cause health effects, such as kidney problems.

- ▷ **Provide appropriate designs for menstrual hygiene management**
 - ▶ Provide access to separate toilet facilities that are accessible for all women, and taking into account disabled female workers.
 - ▶ Ensure toilets are safely located and private, including locks inside the toilet doors.
 - ▶ Ensure toilets have appropriate lighting for changing menstrual materials.
 - ▶ Provide separate containers the disposal of used menstrual materials. This could be a lined waste bin with a lid inside the toilet cabin. If waste bins are provided then a system needs to be in place for emptying the waste bins and ensuring materials are disposed of along with other solid waste.
 - ▶ Provide water or a washbasin within the toilet cabin for washing menstrual materials in privacy.

Figure 2.3.4. Toilets with wash-basins for men and women workers.



Source: *Improving working conditions and productivity in the garment industry, an action manual*, ILO.

- ▶ Use materials that don't stain (i.e. not raw concrete) for constructing toilets, as otherwise the fear of staining can keep menstruating girls and women from using them.
 - ▶ Take immediate action when there is a cleanliness problem in sanitary facilities. Ignoring the problem could result in worker illness or contamination of the environment.
- ▶ **Maintain cleanliness in sanitary facilities.** If sanitary facilities are not regularly cleaned, workers will not be encouraged to use them. Dirty toilets that do not properly separate human excreta from human contact may cause illness and disease, and may contaminate the local environment. Practical ideas for maintenance include:
- ▶ Develop and clearly post cleaning schedules in sanitary facilities to ensure maintenance and to keep workers informed of cleaning schedule.
 - ▶ Conduct regular checks of sanitary facilities to ensure cleanliness.



Key resource

It is important to remember that not all countries have set regulations on workplace sanitary facilities. The points above can provide the first steps. In addition, the World Business Council For Sustainable Development (WBCSD) has created a [WASH at the Workplace Pledge](#), accompanying guidance ([Self-Assessment tool](#) and [Guiding Principles](#)), and a [WASH self-assessment tool for businesses](#). These tools are designed to help employers ensure safe WASH at the workplace, and can be integrated into company processes.



Checkpoint E.2.2. Ensure improved sanitary methods for wastewater/faecal sludge management

Why?

If not correctly disposed of, human excreta can contaminate workplaces and local environments and lead to illness and disease. It is not enough just to provide toilets for workers – improved sanitation methods are necessary to manage and dispose of human excreta correctly. This will help protect the health of people at the worksite, and also of local communities.

How?

- ❑ Design a plan for improved wastewater/faecal sludge management based on the needs of the workers and the workplace.
- ❑ Review plans with local competent authority before building to ensure the plan meets the laws in your country.
- ❑ Develop and maintain transparent communication with public utilities, such as relevant sewage authorities to plan the management process.
- ❑ Conduct a risk assessment of the workplace to understand and identify wastewater/faecal sludge -related sanitary risks.
- ❑ Manage wastewater/faecal sludge with an improved method; one that does not endanger the health of workers or threaten contamination of the environment, including water sources.
- ❑ Conduct regular checks of the wastewater/faecal sludge management system to ensure proper maintenance. Consult with local public utilities for technical assistance as needed.



Reminder: Ebola Virus Disease transmission

Ebola Virus Disease (EVD) is a severe illness in humans that is spread through contact with infected blood or bodily fluids, including human excreta. Contact with untreated sewage can spread the disease. Employers should consult health authorities if there is a risk for Ebola at the workplace.

For more information, see [Joint WHO/ILO briefing note for workers and employers on Ebola Virus Disease](#)



Checkpoint E.2.3. Ensure sanitary methods for solid waste management

Why?

Workplaces can generate large amounts of waste. In some cases, the waste can be dangerous for the health of workers. It could attract scavengers that spread disease, or provide a breeding ground for insects that spread disease. Waste can also quickly become smelly and unsightly, reducing the morale of workers.

How?

- ❑ Design a plan for waste disposal based on the needs of the workers and the workplace, as well as the surrounding environment.
- ❑ Develop and maintain transparent communication with waste collection authorities to plan for regular waste disposal.
- ❑ Conduct a risk assessment of the workplace to understand and identify waste-related sanitary risks.
- ❑ Dispose of waste in a way that does not endanger the health of workers or threaten contamination of the environment, including water sources.

- ❑ Develop a system for safe, culturally and environmentally appropriate method of menstrual products disposal, such as a suitable disposal unit, or an incinerator.
- ❑ Conduct regular checks of the waste disposal system to ensure proper maintenance. Consult with local public utilities for technical assistance as needed.
- ❑ Refer to ILO recommendations for waste disposal in your sector in the corresponding Table in the Introduction.



Checkpoint E.2.4. Integrate information on improved sanitation in workplace training

Why?

Workers that are informed of how to properly use and take care of sanitary facilities, and how to safely dispose of workplace waste are more likely to reduce their risk of illness and disease and protect the environment around them.

How?

- ❑ Integrate information on improved sanitation into workplace trainings. For all sectors, cover topics on:
 - Health risks of contact with human excreta
 - Health risks from open defecation
 - Location of toilets and methods of maintenance
 - Health risks from contact with workplace wastes
 - Proper methods of waste disposal according to workplace
 - Training on proper cleaning methods for cleaning staff
- ❑ Provide specific instruction for waste disposal based on workplace sector. Consult the corresponding Table on ILO instruments in Module 1 for specific instructions.



The importance of workplace training

Workers that are well informed on good workplace practices related to WASH are less likely to have health-related incidents, less likely to miss work due to WASH-related sickness, and to be overall more productive, with better morale. The general guidelines should be followed when providing worker training:

- ▶ Provide high quality trainings to all personnel at no cost to the worker.
- ▶ Ensure that trainings are relevant to the particular sector, job tasks, and individual workplace.
- ▶ Hold trainings in locations and during times that are appropriate for workers to ensure participation. Timing and other arrangements should be agreed upon between employer and workers' representatives, taking into account childcare and family responsibilities.
- ▶ Provide trainings in the languages spoken by workers. Ensure that they are easily understandable and take into account cultural sensitivities.
- ▶ Conduct regular workplace "workplace walk-throughs" with workers to remind them of good WASH practices.
- ▶ Seek guidance from the competent authority for workplace training as needed.
- ▶ Introduce and maintain a culture of prevention at the workplace that rewards workers for safe WASH practices to avoid health-related incidents.





Checkpoint E.2.5. Record and report sanitation specific occurrences, incidents, diseases and accidents

Why?

As employers oversee the enterprise and are responsible for the health of the workers, they have the duty to develop methods to record sanitation-related incidents that affect the health of their workers. Records of incidents provide important data to local authorities for future prevention efforts.

How?

- Develop a system for the recording of sanitation specific occurrences, incidents, diseases and accidents. If you have an existing system for workplace incidents, be sure that sanitation-related issues are integrated. Examples of sanitation-specific events may include:
 - Practices of open defecation
 - Overflowing toilets
 - Overflowing animal slurries or waste containers
 - Spills of hazardous substances into the ground or water sources (e.g. the release of pesticides into local waterways)
 - Outbreak of sanitation-related diseases
 - Injuries due to poor construction or management of toilet facilities, such as trips and falls
 - Cuts due to contact with disposal of sharp objects

- Develop a transparent system for reporting events to the local authorities.



Reminder: Definitions

Dangerous occurrence: Readily identifiable event as defined under national laws and regulations, with potential to cause an injury or disease to persons at work or the public.

Incident: An unsafe occurrence arising out of or in the course of work where no personal injury is caused, or where personal injury requires only first-aid treatment.

Occupational disease: A disease contracted as a result of an exposure to risk factors arising from work activity.

Occupational accident: An occurrence arising out of or in the course of work which results in: (a) fatal occupational injury or (b) non-fatal occupational injury.

For more information, see: ILO code of practice for Recording and notification of occupational accidents and disease (1995).



Module 2: Sanitation
Employers' Checklist

E.2.1	Are improved sanitary facilities provided that meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.2.2	Are improved sanitary methods for wastewater/faecal sludge management in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.2.3	Is workplace waste disposed of according to prescribed laws and guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.2.4	Is information on sanitation-related risks and improved sanitation methods integrated into workplace trainings?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.2.5	Is there a reliable and transparent system in place to record and report sanitation specific occurrences, incidents, diseases and accidents?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?





WORKERS' ACTION MANUAL: SANITATION

Workers, workers' representatives, and workers' organizations play a crucial role in promoting improved sanitation at the workplace. When workers are engaged in workplace discussions and actions concerning sanitation, they are more likely to identify problems, help find practical solutions, and comply with the end result. This Manual is designed to promote the role of workers, workers representatives, and workers organizations in preventing sanitation-related illness and disease and promoting morale, welfare, and productivity at the workplace.



Checkpoint W.2.1. Use sanitary facilities properly and comply with workplace rules on their maintenance

Why?

Properly using toilets, and keeping facilities clean, will not only help to protect your health, but also of fellow workers. Complying with workplace regulations for toilets and their use is your duty as a worker.

How?

- Stay informed about the specific workplace sanitation rules set out by your employer, and follow them.
 - Attend trainings and seminars provided by your employer or by your workers organization.
 - Ask your supervisor for information if you are unclear about workplace rules.
 - Encourage and support young and new workers to develop safe sanitation and hygiene habits.
 - Inform and familiarize other workers that may be at greater sanitation related risks, such as workers with disabilities.
- Stop open defecation. Encourage fellow workers to follow your lead.
- Use sanitary facilities when you need to. Do not retain urine when you need to go.
- Wash hands with soap after defecation, after managing waste and before eating.
- Never restrict fluid intake during work because a toilet is not available. Raise your concern with a supervisor if this is the case.
- Use urinals and toilets for the purpose for which they were designed. Do not use sanitary facilities for any other purposes. Remember that sanitary facilities and "rest rooms" should be separate areas.
- Keep sanitary facilities in the state that you found them in order to maintain a state of cleanliness.
- Dispose of menstrual materials in appropriate receptacles.



Reminder: The dangers of not going

Holding in large amounts of urine for an extended period of time can increase your chances of getting a urinary tract infection or bladder infection. Workers in sectors that may not always have immediate access to toilets, such as in the road transport sector, should be particularly aware, or make their employers particularly aware, of the importance of using the toilet when needed.

Figure 2.3.5. Guidance for workers on how to correctly use toilets.



Checkpoint W.2.2. Comply with workplace rules on waste disposal

Why?

Workers are responsible for complying with the rules for waste disposal at the workplace. Waste from work-related tasks may be hazardous for human health and the environment. By taking the steps needed to control sanitation-related risks from dangerous waste, workers can protect themselves, their fellow workers and local communities.

How?

- ❑ Stay informed of, and follow, the specific workplace rules set out by your employer on waste disposal.
- ❑ Attend trainings and seminars provided by your employer or by your workers' organization.
- ❑ Ask your supervisor for information if you are unclear about workplace disposal rules.
- ❑ Do not pour dangerous liquids, like pesticides, down the sink or toilet, or down drains.
- ❑ Refer to Guide to waste disposal according to work sector in the Introduction.

**Worker duties: Cooperation**

Workers have the responsibility to keep themselves safe at the workplace. This includes cooperating with the health and safety rules at the workplace. Countries sometimes provide for sanctions in case of workers' non-compliance with safety rules. In Singapore, this can result in fines. The failure of the worker to comply with workplace safety rules is regarded in Spain as misconduct which may result in disciplinary measures by the employer. In Morocco, non-compliance may lead to immediate dismissal without compensation.

Sources: Occupational Safety and Health Convention, 1981 (No. 155), Article 19(a). General Survey concerning the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Safety and Health Recommendation, 1981 (No. 164), and the Protocol of 2002 to the Occupational Safety and Health Convention, 1981. ILO: Geneva, 2009.

**Checkpoint W.2.3. Monitor and report sanitation-related risks****Why?**

As a worker, you should be aware of the sanitary conditions and behaviours around you. Incorrect use of toilets, or of disposal sites, could harm you, fellow workers and the community. By voicing your concerns, you can make a real difference for workplace health and safety.

How?

- Be aware of workplace conditions that are unsanitary. For example:
 - Toilets that are broken.
 - Toilets are not accessible for workers with disability.
 - Lack of receptacles for menstrual materials.
 - Trash bins that are full or overflowing.
 - Animal waste slurries that are leaking or overflowing.
 - Pesticide containers that are leaking.

- Be aware of improper use of facilities and non-compliance by other workers. For example, workers that:
 - Practice open defecation.
 - Squat on toilet seats rather than sit on them.
 - Dispose of dangerous wastes into the environment instead of in proper receptacles.
 - Use toilet facilities for other purposes, such as resting areas.
- Report situations or behaviours to a supervisor that may pose a sanitation-related risk. Remember that risks can be potential (may cause a health concern in the future if not remedied) or actual (risks that are actively causing a health concern).

**Imminent danger**

It is possible that some unsanitary conditions present a serious danger to life or health. If the employer or competent authority has been made aware of it, and has not fixed it, remember that you have the right to not return to the work situation where there is a continuing imminent and serious danger to life or health. For example, imagine a situation where continued open defecation on the farm you are working is causing cholera among the workers. You do not want to be infected, so you report the situation to the competent authority. If action has not been taken to fix the problem and the spread of cholera continues, this presents a continuing imminent and serious danger to life or health.

Source: ILO Occupational Safety and Health Convention, 1981 (No. 155), Article 19(f).



Module 2: Sanitation
Workers'; Workers' Representative; and Workers' Organization Checklist

W.2.1	Are workplace sanitary facilities being used properly? Is there compliance with workplace rules on maintenance of sanitary facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
W.2.2	Is there compliance with workplace rules on waste disposal?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
W.2.3	Is active monitoring and surveillance of sanitary conditions and behaviours by workers in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?



MODULE 3

HYGIENE





MODULE 3: WHAT IS HYGIENE AT THE WORKPLACE?

- Hygiene at the workplace describes the practice of keeping oneself, and the surrounding environment, clean and free of infection risk. It includes personal and workplace practices that protect health and stop the spread of illness and disease, such as handwashing, bathing, laundering, food hygiene, and safe menstrual hygiene management.
- It also refers to the provision of facilities and services that can be used by everyone to help maintain health and prevent the spread of illness and disease, such as handwashing facilities with water and soap, showers, laundry facilities, food service facilities, and options for menstrual hygiene management.
- Hygiene encompasses interventions that promote hygienic behaviors and management at the workplace, taking into account both behaviors and facilities, which work together to form a hygienic workplace.

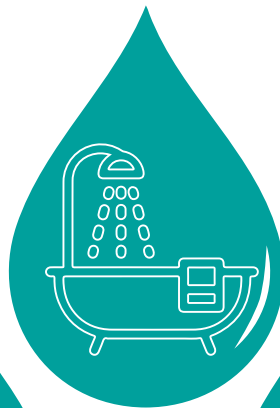
Contents of this module

This module presents the importance of personal hygiene and the provisions that are necessary to maintain a hygienic workplace. The aim of the Training Guide is to inform stakeholders on the following topics:

Guide 3.1. Hand hygiene



Guide 3.2. Showering and bathing



Guide 3.3. Laundering



Guide 3.4. Food hygiene



Guide 3.5. Menstrual hygiene management (MHM)



GUIDE 3.1. HAND HYGIENE

Why is workplace hand hygiene important?

Access to improved water and sanitation facilities does not, on its own, necessarily lead to improved health and hygiene. Evidence shows that hygienic behavior is crucial to protecting against illness and disease. Of these behaviours, handwashing with soap at key moments (including after defecation, before food preparation and eating) is of central importance.

Germs are spread from person to person through contaminated hands in the absence of good hygiene. As presented in the Sanitation module, human excreta contain germs that can cause disease. Hands that have been in contact with excreta, nasal excretions and other bodily fluids, can pass large numbers of germs.

Hands can also carry other workplace germs from sources such as animal or bird excreta, domestic or wild animals, and contaminated foods. In addition to germs, hands can be a transport route for dangerous materials, like pesticides or other toxic chemicals.

Handwashing is especially important at workplaces, where large numbers of people may congregate in close quarters. It is key in areas where:

- ❑ ill or vulnerable people are concentrated (healthcare settings, nursing homes);
- ❑ where food is prepared and eaten (workplace canteens); and
- ❑ workplace accommodation, especially where there are young children.



Hygiene related diseases (examples, not limited to):

- ▶ Pneumonia
- ▶ Trachoma
- ▶ Scabies
- ▶ Skin and eye infections
- ▶ Diarrhoea-related diseases
 - Cholera
 - Dysentery

Source: UNICEF (2015). Hygiene Fact Sheet.

What is necessary for proper handwashing?

Handwashing facilities are necessary at the workplace in sufficient quantities and accessible for all. This includes four necessary components: access to washbasins with soap, running potable water and single use towels (paper or otherwise) or other means of hand drying.

1. Washbasins (or other handwashing facilities)

These are the structures that allow workers to wash their hands with running water.

- ❑ They can come in all shapes and sizes, and can be single use, or allow for many workers to wash their hands at the same time (i.e., group handwashing facilities), depending on the workplace.
- ❑ They must be fully accessible for people with disabilities.
- ❑ They should be attached to a piped water system that provides potable running water through a tap or faucet.

- ❑ Drainage, or a system for collecting wastewater is also necessary, as it may contain germs or hazardous materials washed off of the hands. Appropriate drainage is also necessary for vector control.

2. Potable running water

Water running from a piped water source is less likely to be contaminated. Still water, such as water in a tub or in a bucket, may already contains germs from others that washed their hands in it. Other aspects to consider:

- ❑ Running water should have sufficient water pressure.
- ❑ Potable water means water that is safe enough for drinking, and should be provided for handwashing whenever possible. In situations where potable water is not available for handwashing, non-potable water should be clearly marked with recognizable signage.

Figure 3.1.1. Al Rashidy El Mizan production site.



© ILO/Crozet M.

- ❑ Water temperature is important to consider. Warm water will help break down the dirt and grime that often carries germs. During work in cold temperatures, it may also help promote handwashing by workers by increasing comfort.



Running water without a piped system:

The ideal situation is to have piped running water available for handwashing facilities. However, not having access to piped running water does not mean that workers cannot properly wash their hands. Other methods could include hanging a container from above and filling it with clean water. When a tap is attached, it can release the water in small amounts to run over hands during washing. See UNICEF's guide: "[How to make a Tippy Tap.](#)"

3. Soap or soap alternatives

Proper handwashing requires soap, or soap alternatives. Washing hands with water alone is significantly less effective in terms of removing germs. Soap is important because:

- ❑ Soap breaks down the grease and dirt that carry germs by helping the rubbing and friction that dislodge them.
- ❑ Using soap adds to the time spent washing which increases the chance that germs will be removed or destroyed.
- ❑ Soap leaves hands smelling pleasant. The clean smell and feeling that soap creates is an incentive for its use.





Soap Alternatives

1. Ash: In situations where soap is not available, the WHO recommends the use of wood ash or coal ash as a soap alternative, rather than using water alone.

2. Alcohol-based handrub: The WHO also recommends using alcohol-based handrub in situations without access to soap and water. The ILO also notes that alcohol-based handrub is a convenient and efficient alternative to handwashing, as long as hands are not soiled. Steps include:

- ▶ Ensure that the hand rub comes into contact with all hand surfaces.
- ▶ Rub hands together vigorously, paying attention to fingertips.
- ▶ Stop rubbing when the solution has evaporated and the hands are dry.
- ▶ Ensure that hands are washed with soap and water after several consecutive applications of alcohol-based hand rub.

*Sources: WHO (2009). Water, sanitation and hygiene standards for schools in low-cost settings. WHO: Geneva, 2009.
ILO/WHO HealthWISE Action Manual. Factsheet 3.10 "Hand hygiene" ILO: Geneva, 2014.*

Some work tasks can make the hands extremely dirty, or can leave them covered in materials that are difficult to remove, like paint. Remember that dangerous materials, like paint solvent and other chemicals, should not be used to wash hands as they can be dangerous for human health.

4. Hand towels or dryers

After washing hands, hands should be dried. Wet hands are slippery and can cause unintentional accidents at the workplace. To promote hand drying, towels or other suitable means of drying hands should be located near washbasins. This may include single use towels made of paper or other material, or air-dryers. The critical point is that whatever means are used to dry hands, they should be sanitary. Sometimes, not all germs are removed during handwashing, potentially

transferring them to the towel used for drying. This means that:

- Each towel should be used by only one worker and should be used only once.
- After use, it should be disposed of immediately, or left for laundering, in the appropriate place.

What is the proper way to wash hands?

Handwashing should take at least 20 seconds. Refer to the following guide for proper handwashing, step-by-step. This guide can be posted as a reminder at the workplace.

When is it important to wash my hands?

During work, there are critical times when handwashing is particularly important.

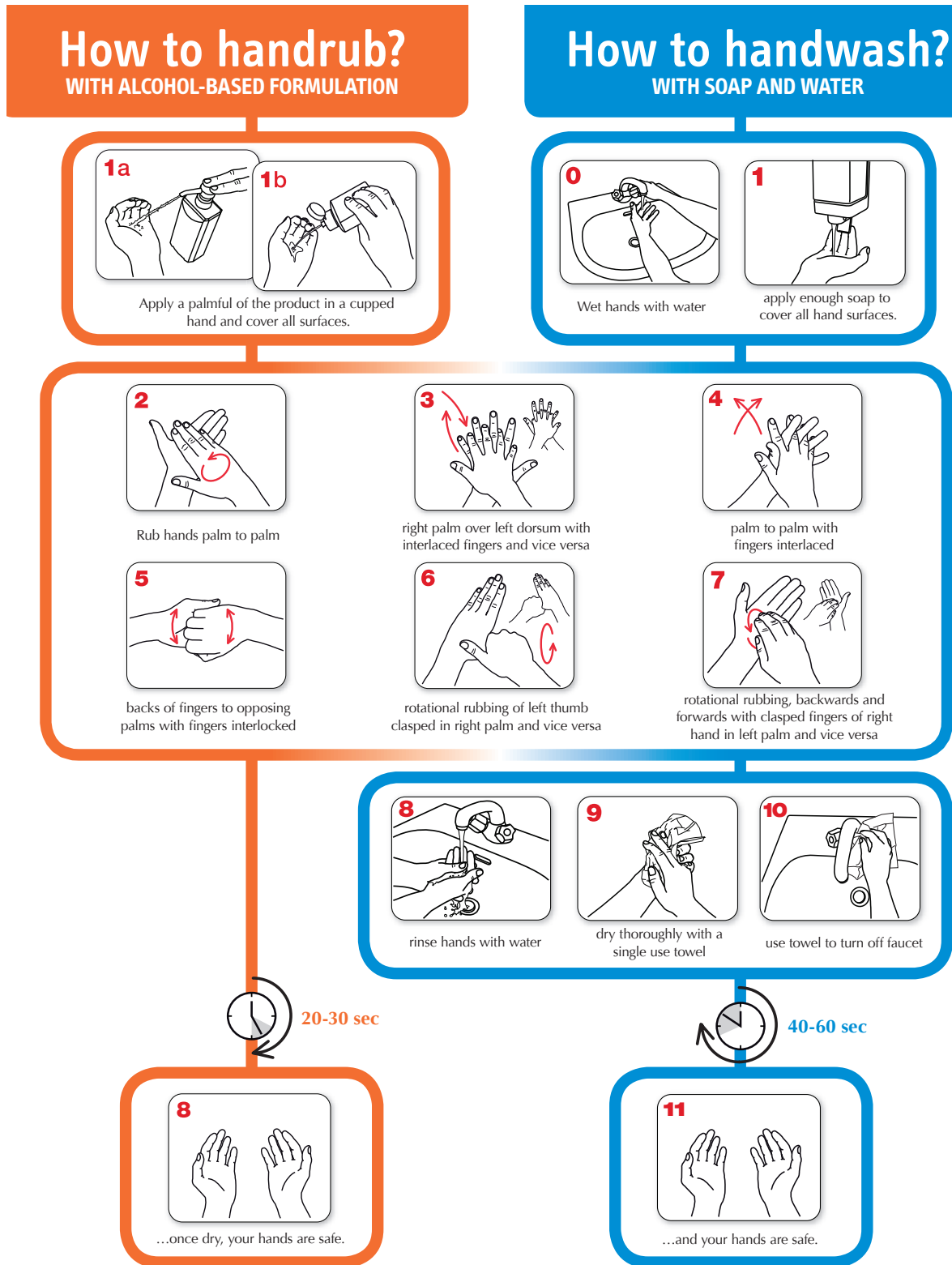
BEFORE

- ▶ **Before** eating or drinking.
- ▶ **Before** handling or serving foods or drink
- ▶ **Before** starting a new work activity or task where clean hands are important (i.e., handling patients in a healthcare setting).
- ▶ **Before** going home to your family.

AFTER

- ▶ **After** using the toilet or urinal.
- ▶ **After** exposure to human excreta from cleaning or accidents, or from changing diapers.
- ▶ **After** exposure to human biological liquids, such as nasal discharge while sneezing.
- ▶ **After** exposure to dangerous materials, like animal waste, pesticides, or toxic solvents.

Figure 3.1.2. The standard WHO guide to proper handwashing.



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2006, version 1.



Where should washbasins be located?

Workplace sanitation and hygiene come hand-in-hand. As such, washbasins should always be located in close proximity to any exposure that presents a health risk; or in places where clean hands are necessary to promote workplace health. They must also be fully accessible for people with disabilities. This includes:

- **Toilets and urinals:** Any workplace toilet or urinal should have, in close proximity, a washbasin with soap and water. Some toilet rooms include a washbasin next to the toilet. Washbasins can also be located immediately outside of the toilet. The proximity of the washbasin to the toilet should remind and encourage workers to wash hands after using a toilet or urinal and before returning to work.



Privacy for menstruating girls and women

Handwashing facilities inside gender separated areas or cubicles are important for menstrual hygiene management, as girls and women may not want to wash blood from their hands in public spaces.

- **Hazardous materials:** Work areas that may expose workers to hazardous materials may also have a washbasin in proximity to protect workers' health. For example, in the health services sector, washbasins are essential not only next to toilets, but also in medical examination or operating rooms.

- **Workplace cooking facilities and canteens:** A washbasin with water and soap in a workplace cooking facility is important for routine handwashing before and during food and drink preparation and serving. A washbasin may also be provided in a canteen to remind workers of the need to wash hands before eating and drinking.

- **Workplace accommodations:** Washbasins with soap and water should also be located in workplace accommodations when they are provided to workers, including in close proximity to toilets and urinals as well in cooking facilities.



Take away point:

Hands can carry dangerous germs and materials. Handwashing is a simple, fast and cost-effective method to promote workplace health and prevent the spread of disease. Providing washbasins and promoting handwashing can increase the health and welfare of workers, and prevent missed days at work due to illness, thereby increasing morale and productivity.

GUIDE 3.2. SHOWERING AND BATHING

Why is showering and bathing important at the workplace?

The term showering or bathing refers to any type of washing of the body, other than of the hands. As presented in the previous guide, hands can carry germs and dangerous substances. The same goes for other areas of the body. We should consider three types of washing and their importance for workplace safety and health:

1. Regular washing
2. Workplace washing
3. Emergency washing



Health concerns related to poor hygiene (examples, not limited to)

- ▶ Body lice
- ▶ Scabies
- ▶ Fungal infections
- ▶ Ringworm
- ▶ Trachoma
- ▶ Pinworms
- ▶ Diarrhoea
- ▶ Pneumonia/respiratory infections

Centers for Disease Control and Prevention, CDC (2014). Hygiene-related Diseases Factsheet.

1. Why is regular washing important?

Every day, no matter what we do, we are exposed to elements in the environment that cover our skin, such as dust, or pollution from the air. In addition, our bodies release sweat. These factors can make us dirty and can be a breeding place for germs.

Regular washing ensures that we clean our bodies from the germs, and that we do not bring these germs with us when we go to work. It also helps us smell clean, increasing the comfort for ourselves and for workers around us.

2. Why is workplace washing important?

Just like hands, other body areas can come into contact with dangerous germs or materials at work, depending on the work situation and work tasks. In some situations, workplaces should be equipped with washing facilities to allow workers to wash after work tasks to reduce risk of illness or disease.

Trans-dermal routes of exposure: Why is skin exposure to dangerous materials a concern? It may be hard to imagine why a chemical that touches the skin is dangerous for the entire body. This is where the concept of transdermal exposure is important. Some substances can penetrate the skin and enter the bloodstream, causing toxicity throughout the body. Health effects may be felt immediately, or may only show up after some time. Examples are listed below.

Substance/Exposure	Health effect/Disease
Nicotine in green tobacco leaves	Green Tobacco Sickness (GTS), characterized by vomiting, nausea, headache, dizziness
Pesticides used in crop agriculture	Pesticide poisoning, which can range from mild to severe.
Benzene or toluene used in petrochemical industry	Skin irritation and burns; once in the bloodstream can lead to immunological effects



What is necessary for workplace washing?

Similar to handwashing, appropriate washing facilities are required in certain work sectors that contain potable running water, soap, and single use towels. An additional consideration is the need for privacy.

Washing facilities

The facilities provided for washing at the workplace can take the form of a shower (where water runs from a tap above, or through a hand-held hose); or a bath-tub (which can be filled up with running water). Dedicated washbasins could also be an option for localized washing. The washing facility should:

- ❑ Be safe, secure and private. Separated facilities should be provided for men and women.
- ❑ Be conveniently accessible and related to the nature and degree of exposure at the workplace.

Figure 3.2.1. Shower



© andrewmalone via Foter.com/CC BY

- ❑ Remove wastewater via a piped system. The provision of showers or tubs at includes the need for adequate means of removing wastewater, as it may contain hazardous materials washed off of the body.
- ❑ Not be used for any other purpose. This is especially true where workplace equipment may get dirty and need to be washed. Separate washing areas should be provided for equipment so that it does not contaminate showering facilities.

Running water

The aim of workplace washing is to remove dangerous elements from the skin and hair in a safe and comfortable way. As such, water used to shower or bath should be:

- ❑ Potable, so that it does not pose a health risk. During showering, water may enter the eyes or mouth, and may lead to infection if it contains germs.
- ❑ Efficient, in that it breaks down dirt and grime. Water pressure should be adequate. In addition, warmer water can help break down dirt more quickly. While the ILO recommends that running water is available for washing needs at the workplace, washing is still possible without running water, particularly for localized washing needs.
- ❑ Comfortable, so that workers are encouraged to wash regularly. Warmer water may make workplace bathing more pleasant and increase morale in workers.
- ❑ Safe, in regards to maintaining proper body temperature. If in a cold working environment, a lack of warm water can be dangerous and may increase the risk of cold-related conditions, like hypothermia.

Soap

Soap and other approved body cleaning agents (like hair shampoos) should be used to break down the contaminating elements on the surface of the skin and in the hair. Soap should:

- ❑ Be non-irritating to the skin. Since washing may be frequent in certain workplace situations, soap should not harm or damage the skin, even after extensive use.
- ❑ Not be replaced with agents that are not approved for washing. Remember that as for handwashing, only approved agents should be used for washing. Substances like solvents or paint thinners are toxic and can cause harm to the body!

Towels

The body should be dried off after washing for comfort and to minimize accidents due to slippery skin. Towels at workplace facilities should be:

- ❑ Free of contamination and clean for use.
- ❑ For single use only, and should not be shared between workers.
- ❑ Either laundered or disposed of, depending on the workplace conditions and requirements.

3. Why is emergency washing important?

There may be situations where exposure to hazardous substances occurs unintentionally, in the form of a workplace accident, such as a chemical spill. In this case, immediate washing is necessary to reduce the risks of adverse health effects.

The first seconds after exposure to a dangerous substance, especially to a corrosive one, are crucial. Delay in appropriate treatment may cause long-term injury. Emergency washing stations provide immediate and on-the-spot body and face decontamination, allowing workers to quickly flush away life-threatening chemicals. Two types

of emergency washing facilities to consider are emergency showers, and emergency face/eye wash stations.



Corrosive substances:

These are materials that can attack and destroy body tissues on contact, causing damage immediately, particularly to skin and eyes. On the skin, corrosives can irritate burn and blister the skin. In severe cases, burns over a large part of the body can cause death. When in contact with eyes, corrosives can cause burning, scarring or even permanent blindness. Examples of workplace corrosives include:

- ▶ hydrochloric acid
- ▶ nitric acid
- ▶ ammonium hydroxide
- ▶ potassium hydroxide (caustic potash)
- ▶ sodium hydroxide (caustic soda)

Emergency showers

When it is necessary, workplaces should have emergency showers that are specifically designed to flush worker's head and body after an exposure to a dangerous substance. Emergency showers can also be used for washing contaminants from clothing, or putting out clothes that have caught on fire.

Emergency face and eye wash stations

Accidental exposure of the face and eyes to various chemical substances can result in irritation, temporary or permanent vision impairment, or even blindness. When eye accidents occur, emergency eye wash stations can quickly flush the eyes with water to reduce exposure to the dangerous substances. These units may resemble water fountains, but instead have two openings that can deliver water to both eyes simultaneously.



Figure 3.2.2. An emergency wash stations.



What is needed for emergency washing facilities?

Requirements for emergency washing facilities include:

- ❑ **Potable water.** It is essential that the water provided is free from contamination and does not pose a risk to workers.
- ❑ **Quick and easy access and use.** In an emergency, such as a chemical splash, every second counts. Emergency washing facilities should be in close proximity to work areas that contain hazardous materials. In addition, the facilities should be easy to use so that workers can activate them immediately. Remember that some eye splashes can impair vision immediately. As such, workers should be able to locate and turn on washing facilities without losing too much time.



Precision for details:

Other requirements for the types of emergency washing stations and details related to their use and maintenance is set by the competent authority. Guidelines may include:

- ▶ Location and number of emergency washing stations
- ▶ Exact measurements of emergency washing stations
- ▶ Pressure of water
- ▶ Temperature of water
- ▶ Use of other “flushing fluid”, such as preserved buffered saline solution



Take away point:

Providing, maintaining, and properly using washing facilities, both for workplace exposures and in emergency situations, helps protect the health and welfare of workers and helps to maintain a hygienic workplace.



GUIDE 3.3. LAUNDERING

Why is laundering at the workplace important?

Just as hands and bodies are exposed to germs and hazardous substances at the workplace, so are the clothes that we wear and the other materials that are present in the work-area. Workplace clothing and personal protective equipment (PPE), which is specifically designed to protect from workplace exposures can harbour different kinds of hazardous substances. Consideration should also be made for fabrics or materials that may be dirtied in the workplace, like towels and linens.

Why is laundering work clothing and PPE important?

Work clothes and PPE (such as helmets, goggles, and respirators) are designed to act as a barrier between you and the specific hazardous exposures at the workplace. As such, it is normal that these clothes and materials can become contaminated.

When work tasks are finished, and the contaminated clothing and other equipment are removed, there is a risk of contact with skin if the clothing is not properly handled, laundered, or

disposed. Hazardous substances on work clothing and PPE of particular concern include:

- ▷ Pesticides
- ▷ Asbestos
- ▷ Human biological liquids
- ▷ Animals remains or other biological liquids
- ▷ Radioactive substances
- ▷ Corrosive, or toxic chemicals

The options for handling work clothes and PPE is to either follow instructions on its proper cleaning or laundering, or to dispose of the clothing and PPE in a safe manner, according to local laws. This duty is the responsibility of the employer, and workers should never take home contaminated clothing or PPE to wash.

Along these same lines, it is important to consider that in some cases, workers may change from their personal clothing to workplace clothing when they arrive to work. Workplace changing facilities and

Figure 3.3.1. Laundry workers in a Washington hotel, United States.



© ILO/Maillard J.



storage areas, like lockers, are important to prevent the spread of contamination from protective clothing to personal clothing.



Warning! Take home exposures

If you do not leave your workplace clothing and PPE at the workplace, you run the risk of bringing the hazardous exposures from your work into your home. These hazardous substances can get onto your floors, your furniture and most importantly, onto your family members. These are known as take-home exposures. Many workplace chemicals might be dangerous, especially for children. Of particular concern are pesticides, which can be dangerous for young children who tend to put things in their mouth and spend time on the floor where dust and residue from clothes may settle.

What about other workplace materials?

Other materials may become contaminated due to different work tasks and require appropriate laundering to reduce workplace hygiene risks. The types of materials will clearly depend on work sector. The important thing to consider is whether or not the material in question may pose a hygiene risk to people at the workplace. If so, the appropriate authority should be consulted for information about proper workplace laundering, handling, or disposal of the items. Examples include:

- ▶ Workplace towels from washing facilities
- ▶ Towels and linens from workplace accommodations
- ▶ Materials contaminated with asbestos
- ▶ Towels and linens from the health care service sector



Health services and HIV/AIDS:

Laundering needs in the health services sector are particularly crucial, especially when it comes to dealing with diseases like HIV/AIDS. Towels, linens and clothing that are contaminated by blood may pose a risk for transmission.

- ▶ All linen should be washed with detergent.
- ▶ Where there is no access to specialist services, contaminated clothing or linen should be washed with detergent using the hot wash cycle of a domestic washing machine, heating the water to a temperature of at least 80 °C, or dry cleaned followed by ironing with a hot iron.
- ▶ If washing by hand is unavoidable, household rubber gloves should be worn.

Source: Joint ILO/WHO guidelines on health services and HIV/AIDS http://www.who.int/occupational_health/activities/2ilowho.pdf Geneva, 2005



Take away point:

In addition to hands and skin, clothing can be contaminated with hazardous substances and pose a health risk. Hygienic methods of laundering that prevent human contact with toxic elements keeps workers safe and healthy, as well as their families.

GUIDE 3.4. FOOD HYGIENE

Why is food hygiene important?

Foodborne diseases represent a serious public health problem all over the world. Germs on consumed foods can cause severe diarrhea and some may even cause death. Chemical contamination of foods can lead to acute poisoning or long-term diseases, such as cancer.

Unsafe foods may include such as raw meats, fruits and vegetables contaminated with human or animal excreta, or foods contaminated with chemicals (like mercury). Thankfully, many foodborne diseases can be prevented by using proper food handling behaviours.

What about food hygiene at work?

The right to freedom from hunger is a basic human right, and yet it is sometimes ignored in the context of rights at work. Safe food is also important for a productive workforce. Workers that do not have access to safe food, or are not aware of the basics of food hygiene, can fall sick and miss workdays, leading to reduction in productivity. In work sectors where accommodation is provided to workers, the necessity for safe food extends to the living quarters and concerns families as well as communities.

Many work factors may contribute to contaminating food, including hot climate, time gap between food preparation and eating, contaminated water, insufficient cooking/re-heating, lack of sanitation in canteens, hard to clean surfaces, lack of personal hygiene (handwashing), and animals accessing the kitchen.

Since all people need safe food for proper health, food hygiene is the responsibility of all at the workplace. Food hygiene promotion is about changing behaviour related to food hygiene, and understanding the basic concepts related to food safety. Food hygiene at work comprises of three inter-related components: safe food, safe food facilities, and safe food services.



Foodborne disease causes (examples, not limited to):

Bacteria

- ▶ Salmonella
- ▶ Campylobacter
- ▶ Listeria
- ▶ Vibrio cholera

Viruses

- ▶ Hepatitis A

Prions

- ▶ Bovine spongiform encephalopathy ("mad cow disease")

Parasites

- ▶ Giardia
- ▶ Cryptosporidium

Source: WHO (2015). Food safety: Fact sheet N°399.


Safe food

To help prevent food contamination at the workplace, and help ensure safer food, there are five key steps to remember.



Figure 3.4.1. WHO Five keys to safe food poster.

Five keys to safer food




Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.

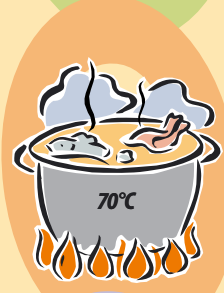


Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

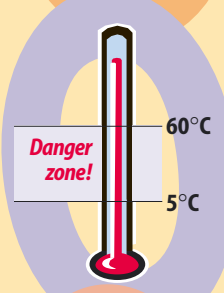


Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.




Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.




Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

Knowledge = Prevention



Food Safety
World Health Organization

WHO/SDE/PHI/FOS/01.1
Distribution: General
Original: English



1. Keep clean

Germs can move quickly and discretely from hands to food. When a worker goes to eat - either a snack or a meal- there is a risk of food contamination.

- ▶ Wash hands with soap and water before handling, preparing, serving, or eating food. Wash hands during handling or preparing processes in the case of contact with unhygienic materials (raw meats).
- ▶ Remove and store PPE before entering eating areas or before eating.
- ▶ Shower or bathe as necessary before entering eating areas or before eating.
- ▶ Wash and sanitize surfaces, utensils and equipment used in food preparation.
- ▶ Protect eating areas from insects, pests and other animals

2. Separate raw and cooked foods

Raw foods of animal origin may contain dangerous germs that can spread to other foods or cooking and eating utensils.

- ▶ Separate raw meats, poultry and seafood from other foods when handling and storing.
- ▶ Use different equipment and utensils for preparing raw foods and other foods.

3. Cook thoroughly

Some foods, like raw meats, require proper cooking before consumption. Cooking raises the temperature of food, killing the germs that are present.

- ▶ Bring soups and stews to a boil, and cook meats, poultry and seafood thoroughly.
- ▶ Reheat cooked food thoroughly before eating.

4. Keep food in safe temperatures

Depending on the length of a workday, food may be stored before or after it is eaten. It is particularly true for workers that may not have access to a canteen and may need to bring their food from home.

- ▶ Avoid leaving cooked food at room temperature. Refrigerate cooked and perishable food.
- ▶ Keep food hot prior to serving.

5. Use safe water and raw materials

The water used for food and utensil washing, and for cooking, should be potable. Likewise, the raw food materials used for cooking should be of high quality, and should not be spoiled or contaminated.

- ▶ Use potable water for cooking, washing of food, and for the washing of cooking and eating utensils. The ILO recommends that potable water should be provided by the employer for worker food needs.
- ▶ Choose fresh, wholesome and safe foods.
- ▶ Do not use food beyond its expiration date.



Key resource:

For more information on how to ensure safer food at the workplace, refer to the [WHO's Five Keys to Safer Food Manual](#). The manual provides detailed information and guidance on the five steps, and provides practical ways of training stakeholders on this important workplace topic.



Food service facilities (i.e., canteens)

Workers have the right to eat during the workday, and therefore must have a dedicated space for eating, which is hygienic and does not pose a health risk. Food contamination can occur quickly, making it necessary to create separate areas where workers can safely eat a snack or a meal. Food service facilities should be:

- ▶ Maintained to a high standard of hygiene. This includes regularly cleaning, including the food handling and cooking areas, eating areas, as well as cooking and eating utensils.
- ▶ Within safe walking distance from the work area.
- ▶ Accessible to all workers. Workers with physical handicaps or other impairments should not be forced to travel far for a meal.
- ▶ Located at a safe distance from areas where hazardous materials are stored or used.
- ▶ Sheltered from the weather.
- ▶ Offer affordable and safe food.

Workers must have **the proper time** to enjoy their meal. Workers that feel pressured by time constraints may skip meals, increasing fatigue and the chance for accidents and illness at the workplace.

Figure 3.4.2. Ship inspectors, with an officer, check whether food hygiene standards are respected in the fridges.



Food services

In some situations, workers are dependent on the food that is provided in the canteens. As such, the persons in charge of food services should be skilled in nutrition, sanitation and food handling, in order to ensure that workers do not get sick from the food that is served. Food services should:

- ▶ be licensed by a competent authority on food hygiene.
- ▶ follow all regulations related to food hygiene.
- ▶ be inspected regularly by the competent authority.



Take away point:

Contaminated and unsafe foods present a serious risk for workers, and may result in sickness or death, and a loss of productivity. Access to safe food, safe eating facilities, and safe food services are imperative for healthy workers, and for promoting decent and hygienic work conditions.

GUIDE 3.5 MENSTRUAL HYGIENE MANAGEMENT (MHM)

Why is MHM important at work?

Women represent nearly half of the global labor market, and those of menstruating age (~12 to 49 years) are a significant and growing portion of the women employed around the world. Menstruation is a normal biological process and a key sign of reproductive health, yet in some cultures, it is still seen as shameful, and carries with it a significant stigma.

This can be particularly problematic at work, and women often face many challenges when it comes to managing their menstruation during working hours. For example:

- ▶ Inadequate and/or unhygienic toilet facilities.
- ▶ Lack of privacy in toilet and washing facilities.
- ▶ Lack of facilities for disposing of sanitary pads or menstrual cloths.
- ▶ Lack of opportunities for MHM when traveling for work, or working far away from toilet facilities.
- ▶ Lack of access to appropriate sanitary materials.
- ▶ Increased risk of infection from not managing menstruation appropriately
- ▶ Difficulty raising MHM issues with male employers, such as the need for additional time to access toilet facilities.
- ▶ Cultural restrictions (such as menstruating women not being able to leave the house) may have an impact on the ability to engage in work-related activities.

Despite the many challenges that exist, there are steps that can be taken at the workplace to promote MHM. Adequate MHM refers to the materials, services, and information necessary for girls and women of menstruating age to safely and effectively handle their menstruation, without shame or embarrassment. It is important to note that MHM is truly a cross-cutting WASH issue that extends beyond access to hygiene, and encompasses access to safe water and access to sanitation. Key considerations for MHM at the workplace include:

Toilets

- ▶ Provide access to separate toilet facilities that are accessible for all women, and taking into account disabled female workers.
- ▶ Ensure toilets are safely located and private, including locks inside the toilet doors.
- ▶ Ensure toilets have appropriate lighting for changing menstrual materials.
- ▶ Provide facilities for the disposal of used menstrual materials. Such as a waste bin with a lid inside the toilet cabin – or an attached incinerator. If waste bins are provided then a system needs to be in place for emptying the waste bins and ensuring materials are disposed of hygienically.

Washing facilities

- ▶ Provide access to washing facilities that are accessible for all women.
- ▶ Ensure that these washing facilities are private so that women can comfortably wash their hands, their bodies, and menstrual materials.



Workplace organisation

- ▶ Have a discrete supply of menstrual materials available at work.
- ▶ Provide awareness raising sessions on MHM for girls and women by a health professional.
- ▶ Include men in awareness raising, particularly male managers and supervisors, in order to increase understanding of MHM, such as increased time for using sanitary facilities.
- ▶ Promote a supportive environment where girls and women can manage menstruation without embarrassment or stigma.



Take away point:

Female workers represent nearly half of the global workforce. Ensuring adequate MHM at the workplace not only promotes the health and well-being of girls and women, but also contributes to their increased morale and productivity, as well as to the reduction of harmful menstruation-related stigma of all workers.

Figure 3.5.1. Menstrual hygiene management.



© Graczyk H.



GOVERNMENT ACTION MANUAL: HYGIENE

Promoting and maintaining hygiene at the workplace must start with effective policies and laws. The following Checkpoints are provided to inform governments of their responsibilities and duties to mainstream workplace hygiene-related issues into existing OSH frameworks and the development of new campaigns.



Checkpoint G.3.1. Integrate considerations for workplace hygiene into OSH policies, systems and programmes

Why?

Hygiene is a key factor for improving the health of not only workers, but also of families and communities. Evidence shows that increased handwashing directly corresponds to reduced rates of disease transmission. By promoting behavioural change for personal hygiene through information and education, governments can make significant impacts towards healthy workplaces and healthy communities.

How?

- Develop hygiene-specific policies, programmes, systems and campaigns. Integrate messages on the importance of a preventative safety and health culture that extends beyond the workplace and into the home and community. This may include initiatives on:
 - Handwashing promotion at work.
 - Awareness raising on MHM.
 - Workplace showering (including accessible designs) and laundering of clothing to reduce take home exposures for families, especially young children.
 - Food hygiene at work.
- Develop objectives, targets, and indicators of progress for hygiene at work.

- Dedicated funding/budgets to allow for hygiene promotion in workplace and for ensuring adequate facilities, and their maintenance.



Reminder: definitions

- ▶ **National policy** refers to the national policy on OSH and the working environment developed in accordance with the principles of Article 4 of the Occupational Safety and Health Convention, 1981 (No. 155);
- ▶ **National system** for OSH or national system refers to the infrastructure which provides the main framework for implementing the national policy and national programmes on occupational safety and health;
- ▶ **National programme** on OSH or national programme refers to any national programme that includes objectives to be achieved in a predetermined time frame, priorities and means of action formulated to improve occupational safety and health, and means to assess progress.

Source: Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).



Checkpoint G.3.2. Establish and enable laws for improved hygiene at work

Why?

Governments are responsible for setting the laws for hygiene-related matters at the workplace, including the provision of washbasins, showers, laundering facilities, MHM considerations and food hygiene by employers. These laws are necessary for both employers and workers to understand their respective rights and duties.



How?

- Develop and periodically update hygiene-related laws at the workplace, including:
 - Handwashing requirements in different sectors.
 - The number and type of accessible washbasins, and their maintenance.
 - The number and type of washing facilities and their maintenance, with consideration for male and female workers, as needed based on the work sector or activity.
 - Considerations for MHM.
 - The number, type, and specific design of emergency washing stations, as needed based on the work sector or activity.
 - Requirements for food hygiene, including the licensing of food handlers and servers.
 - Requirements for workplace laundering, particularly for hazardous substances such as:
 - Pesticides and other agrochemicals
 - Animal wastes, such as manures and waste slurry
 - Toxic paints and solvents
 - Medical and biohazard waste
 - Asbestos and asbestos-contaminated materials



Checkpoint G.3.3. Approve and monitor water for washing needs and wastewater disposal

Why?

Water for workplace washing must be potable so that it does not pose a health risk. Wastewater must also be collected and treated in a hygienic way. The competent authority should approve and monitor water authorities and public works departments in their provision of potable water, as well as their collection and treatment of workplace wastewater.

How?

- Hold consultations with regional and local water authorities and public works departments to ensure procedures for potable water provisions and treatment of wastewater.
- Ensure adequate resources for the proper treatment of wastewater to reduce risks of environmental contamination.
- Provide training as needed on hygiene related risks.
- Monitor hygiene services to ensure consistency in potable water provision and treatment of wastewater.



Checkpoint G.3.4. Inspect hygiene provisions at work

Why?

The installation of accessible washing facilities is the first step to promoting workplace hygiene. However, there must also be a system in place for ensuring that facilities have been provided and are being used properly.

How?

- Provide training for labour inspectorates on key workplace hygiene issues. Topics may include:
 - Methods of personal hygiene management at the workplace.
 - Types and number of washbasins, washing facilities, emergency washing stations, including accessible facilities and considerations by gender.
 - Methods for workplace laundering, based on sector-specific needs.
 - Considerations for MHM.
 - Food hygiene practices.
- Promote prevention for hygiene-related concerns by:
 - Providing technical assistance to social partners on the provision and use of washing facilities.



- Carrying out planned, educational visits to inform social partners of respective duties for hygiene management at the workplace.
 - Assessing plans with employers for the design and development of washing facilities.
 - Promoting awareness raising campaigns for improved hygiene, such as workplace handwashing and MHM.
- Enforce the application of hygiene laws at work, using sanctions as needed to promote the protection of workers from hygiene risks. This includes:
- The provision of the correct number, type and standard of washbasins, washing facilities, emergency wash stations, and laundering facilities, including accessible facilities, as needed based on the work sector or activity.
 - The maintenance of such facilities.



Module 3: Hygiene

Government Checklist

G.3.1	<p>Are considerations for workplace hygiene integrated into OSH policies, systems and programmes? (including considerations for washbasins, showers, MHM, food hygiene, emergency washing facilities, and laundering services?)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
G.3.2	<p>Have laws been established and enabled for workplace hygiene provisions (including laws for washbasins, showers, MHM, food hygiene, emergency washing facilities and laundering services?)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
G.3.3	<p>Have services for potable water provision and wastewater disposal been approved? Is there a system in place for monitoring these services?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?
G.3.4	<p>Is there a system in place for training labour inspectorates on hygiene related risks, and ensuring inspections are carried out systematically?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>What action do you propose? Suggestions:</p>	<input type="checkbox"/> Priority?



EMPLOYERS' ACTION MANUAL: HYGIENE

Employers are in a unique position to implement the laws developed by the competent authority in order to keep their workplaces hygienic. A hygienic workplace means a safer environment not only for workers, but also for all people present at the worksite. As such, the following Checkpoints for hygiene should not be seen as duties, but rather as positive action areas that can help promote collective workplace health.



Checkpoint E.3.1. Provide necessary provisions for hand hygiene according to national laws

Why?

Proper hand hygiene is an effective way to prevent the spread of disease at the workplace. The first step to ensuring that workers are participating in personal hygiene practices is to provide handwashing facilities according to the prescribed laws. This may reduce the risk of worker illness, thereby enhancing worker productivity.

How?

- ❑ Refer to national laws (if available) for washbasins as these may differ by country. Practical guidelines are included below.
- ❑ Develop a plan and a design for the provision of handwashing facilities ahead of time if possible.
- ❑ Review plans with the local competent authority before building to ensure the plan meets the laws in your country.
- ❑ Develop and maintain transparent communication with local water authorities for the provision of potable washing water and the disposal of wastewater.
- ❑ Refer to ILO instruments for recommendations on washbasins based on the work sector (See the corresponding table in the Introduction).

Practical guidelines for washbasins

- ▶ **Provide adequate number.** Washbasins should be of sufficient number based on the workplace and the number of workers. Making workers wait to wash their hands may discourage handwashing. Remember that the number of washbasins needed may be related to the work sector (See corresponding table in the Introduction).



Guidance for maritime industries:

A minimum of **one washbasin**, conveniently located, **for every six persons or less** who do not have personal facilities. .

Source: Maritime Labour Convention (MLC), 2006, Title 3

- ▶ **Ensure accessibility.** Provide accessible designs for people with disabilities and people who are unable to use standard designs.
- ▶ **Provide potable running water.** Water used to wash hands should not pose a health risk to workers. In the case that potable water for handwashing is not available and non-potable water is used, it should be clearly marked with recognizable signage so that it is not confused as water suitable for drinking. Water should always come from a running source and should not be stagnant. Warm and cold running water should be provided, as necessary, based on sector-specific guidelines (See the corresponding table in the Introduction).



Guidance for fixed offshore installations:

“At least one washbasin with hot and cold running water for every six persons.”



Source: *Construction of fixed offshore installations in the petroleum industry: an ILO Code of practice*. Geneva: ILO, 1981.

- ▶ **Provide soap or alternatives.** Soap or other approved cleaning agents should be provided in sufficient quality, and should be non-irritating. Do not provide cleaning agents that are not approved by the competent authority as they may cause harm
- ▶ **Provide instruction.** Post signage on proper handwashing behaviour at handwashing stations, such as the materials produced by WHO in Guide 1.1.
- ▶ **Provide adequate drying facilities.** Wet hands are slippery and can cause unintentional accidents. Single use towels (paper or material), or air-blower dryers should be provided.
- ▶ **Ensure adequate location.** Washbasins should be accessible to all workers, at all times, and at every workplace. They should be in immediate proximity to toilet facilities, as well as to other locations where hazardous exposures can occur (See the corresponding table in the Introduction).



Handwashing in animal handling operations:

Washbasins should be provided in locations other than near toilet facilities, if the exposures may cause a health risk to workers. One example is in areas where animals are handled or are present.

- ▶ The employer should institute and enforce regular handwashing as an effective measure against many of the pathogens involved in zoonotic disease transmission.
- ▶ Water, soap, disinfectants and single use towels should be provided at places where animals that are, or are suspected of being, infected are kept..

Source: *Safety and health in agriculture: an ILO code of practice*. Geneva: ILO, 2010.

- ▶ **Ensure lighting.** Natural and/or artificial lighting should be provided for comfort and safety.
- ▶ **Provide adequate time for handwashing.** Even though handwashing does not take long, workers should feel free to wash their hands comfortably and not to feel pressured that they are missing work.
- ▶ **Ensure that washing facilities are not used for any other purpose.** Washbasins should not be used for the cleaning of other items due to potential contamination. Washbasins should be kept clear and should be ready to use by workers.
- ▶ **Ensure adequate means of removing wastewater.** Water that runs off of dirty hands may carry germs or other hazardous materials with it. Employers should institute means of removing the wastewater to proper disposal or treatment sites.



Hand hygiene in the health care:

Hand hygiene in the health care setting is critical due to the exposure with human biological liquids, like blood. Blood could carry many different types of germs that can lead to disease. For more information, see the ILO/WHO HealthWISE Action Manual. ILO: Geneva, 2014.

Source: *Safety and health in agriculture: an ILO code of practice*. Geneva: ILO, 2010.



Checkpoint E.3.2. Provide washing facilities according to national laws

Why?

In addition to hands, faces and other body parts can become exposed to workplace contaminants. To protect the health of workers, employers should provide washing facilities when the type of activity or work sector requires it. The provision of washing facilities helps protect the health of workers, as well as the health of others in and around the workplace.

How?

- Refer to the national laws for washing facilities as these may differ by country. Practical guidelines are included in the section below.
- Develop a plan and a design for the provision of washing facilities ahead of time if possible. Ensure these include accessible designs.
- Review plans with the local competent authority before building to ensure the plan meets the laws in your country.
- Develop and maintain transparent communication with local water authorities or private actors for the provision of potable washing water and the disposal of wastewater.
- Refer to ILO instruments for recommendations on washing facilities based on the work sector in the Introduction.

Practical guidelines for washing facilities

- ▷ **Provide adequate number and type, including accessible facilities.**
Washing facilities should be of sufficient number based on the workplace and the number of workers. It is not only uncomfortable for workers to wait, but it

may also be dangerous to wait to wash off a hazardous substance. The type of facility should allow workers to meet a standard of personal hygiene consistent with the adequate control of exposure and the need to avoid the spread of chemicals hazardous to health. See Module 1 for guidance based on sector.

- ▷ **Ensure privacy.** Washing facilities must give suitable privacy and should therefore be separate for men and for women. Separate washing areas are essential for promoting respect and ensuring dignity at work.
- ▷ **Provide potable running water.**
Contaminated water can infect people when showering by entering the eyes and mouth. Water for washing should be the same quality as it is for drinking. Warm and cold running water should be provided to ensure comfort and safety of workers, and to most efficiently clean the body.
- ▷ **Provide soap.** Soap or other approved cleaning agents should be provided in sufficient quality, and should be non-irritating. Agents that are not approved for use, such as toxic solvents, should be restricted from washing facilities.
- ▷ **Provide adequate drying facilities.**
Each worker should have his or her own towel for personal use to dry after showering or bathing. Towels should not be shared between workers and should be regularly laundered.
- ▷ **Ensure adequate location.** Washing facilities should be conveniently accessible to everyone at the workplace, but also situated so that the facilities do not become contaminated by the workplace.
- ▷ **Ensure lighting.** Natural and/or artificial lighting should be provided for comfort and safety.
- ▷ **Provide adequate time washing.**
Rushed workers may feel that they do not have the time to shower, or to shower properly, thus increasing their risk for hygiene related problems.



- ▷ **Ensure that washing facilities are not used for any other purpose.** Restrict and enforce the washing of workplace materials in showering and bathing areas that are strictly designed for personal washing.
- ▷ **Ensure adequate means of removing wastewater.** Runoff water from washing facilities must be safely removed from the area so that it does not contaminate potable water sources or the environment.



Checkpoint E.3.3. Provide emergency washing stations according to national laws

Why?

Emergencies can occur unexpectedly at the workplace. When it comes to accidents like chemical splashes, timing is everything. Emergency washing facilities provide on-the-spot decontamination, thus potentially reducing the risks of adverse health effects from spills.

How?

- Conduct a workplace risk assessment to identify where accidents, specifically chemical splashes, can occur.
- Design plans for the emergency washing stations based on workplace risk assessment and in accordance with national laws. Some practical guidelines are included below.
- Conduct regular checks of the emergency washing stations to be sure they are functioning.
- Post clear instructions on how to use emergency washing stations.

Practical guidelines for emergency washing stations

- ▷ **Ensure proper number and type.** The need for emergency washing stations depends on the chemicals and work tasks. The selection of protection, whether emergency shower, face or eyewash station, or both, should match the hazard. The number and type of washing stations should also be in accordance to national laws.
- ▷ **Ensure they are strategically placed.** Harm to the body, face and eyes can happen very quickly. Install emergency showers in a place that allows for immediate decontamination in an emergency.
- ▷ **Ensure potable running water.** Water used in emergency showers should be of safe drinking quality. In some cases, other types of liquids may be used, such as saline solutions. National laws should be consulted.



Hierarchy of Controls

Engineering controls and PPE that minimize body and eye exposure to harmful chemical substances are the best ways to protect against injuries. However, engineering controls and personal eye protection are not always enough. Accidents and emergencies can happen, and they are unforeseen. Thus, emergency washing equipment must be available in workplaces where there is a risk of exposure to hazardous chemical substances.



Checkpoint E.3.4. Ensure appropriate hygiene measures for work clothes and PPE

Why?

Hazardous materials, even in small amounts, on work clothes and PPE can be dangerous for human health. Employers are responsible for the management of work clothes and PPE, which includes its proper management after use, whether that is laundering or disposal.

How?

- ❑ Refer to the national laws or manufactures instructions for the cleaning or disposal of work clothes and PPE after use.
- ❑ Develop a plan and a design for the management and cleaning of work clothes and PPE ahead of time, and review plans with the local competent authority.
- ❑ Provide separate facilities for changing and storage areas for personal clothing to eliminate contamination. Ensure the facilities are separates for men and women.
- ❑ Forbid workers from taking home contaminated work clothes or PPE. Under no circumstances should workers be allowed to take items home to wash.
- ❑ Provide for the laundering, cleaning, and disinfecting of contaminated PPE (as necessary) before reissuing the clothing or equipment. This should be provided at no cost to the worker.
- ❑ Inform laundry services of the precautions necessary for handling contaminated clothing.
- ❑ Refer to ILO instruments for recommendations on contaminated PPE and changing facilities in the Introduction.



Washing contaminated PPE:

When washing off PPE, employers should consider the potential for environmental contamination due to PPE washing.

- ▶ Appropriate protocols should be followed when laundering potentially contaminated clothing to ensure that other clothing used at the worksite is not contaminated.
- ▶ Effluent from water used to wash contaminated clothing should be managed to avoid contamination of water sources
- ▶ Contaminated clothing should not be washed in open water.

Source: Safety and health in agriculture: an ILO code of practice. Geneva: ILO, 2010.



Checkpoint E.3.5. Ensure appropriate food hygiene measures

Why?

Contaminated food can sometimes sicken workers within minutes, and may lead to large-scale disease outbreaks that may extend into the community. Employers should approach safe food as they would other aspects of OSH, and should remember that it may promote worker productivity.

How?

- ❑ Promote and enforce workplace rules based on the five keys for safer food.
- ❑ Display the five keys for safer foods poster in food preparation areas, and in food service facilities.
- ❑ Ensure that washbasins and other washing facilities, as necessary, are provided and maintained to ensure hand and bodily hygiene to reduce food contamination.



- ❑ Provide access to hygienic food service facilities when necessary. Ensure they are accessible to all workers, but also a safe distance away from hazardous materials or activities.
- ❑ Ensure that food service providers are trained in food hygiene and safety.



Checkpoint E.3.6. Ensure appropriate materials, facilities, and services are available for MHM

Why?

Girls and women of menstruating age make up a significant part of the labour force worldwide. Ensuring that their menstrual hygiene needs are met through adequate toilet, washing, disposal and awareness raising considerations promotes health and well-being, while increasing morale and productivity.

How?

- ❑ Provide access to separate toilet facilities that are accessible for all women. Make sure that toilets have a lock for privacy and lighting for comfort.
- ❑ Provide hygienic means of menstrual material disposal.
- ❑ Provide access to separate washing facilities, including washbasins and showers/other washing areas. Guarantee privacy for washing and/or drying menstrual materials.
- ❑ Have a discrete supply of menstrual materials available at work.
- ❑ Provide awareness raising sessions on MHM for girls and women by a health professional.
- ❑ Include men in awareness raising, particularly male managers and supervisors, in order to increase understanding of menstrual management

needs at the workplace, such as increased time for using sanitary facilities.

- ❑ Promote a supportive environment where girls and women can manage menstruation without embarrassment or stigma.



Checkpoint E.3.7. Integrate information on personal hygiene into workplace training

Why?

Workers that are informed of how to properly maintain personal hygiene are likely to reduce their risk of illness and disease and protect other workers around them.

How?

- ❑ Integrate hygiene promotion into workplace trainings. For all sectors, cover topics on:
 - Importance of regular handwashing, as well as the critical handwashing times.
 - Need for good personal hygiene habits, both at home and at work.
 - Location of washbasins, washing facilities and laundering facilities.
 - Location and correct operation of emergency washing stations.
 - Requirements for food safety and hygiene, especially for food handlers and servers.
 - Importance of MHM.
- ❑ Provide specific instruction for personal hygiene management based on workplace sector and conditions. Consult the corresponding table in the Introduction for specific instructions.



The importance of workplace training for emergency washing

Emergencies due to chemical splashes can happen at any time, and the quicker a worker can rinse their body or eyes, the more effective the treatment can be. Remember that:

- ▶ Every worker needs clear training on the correct use and location of emergency showers or eyewash stations.
- ▶ Do not assume that workers are already aware of the location, or of the proper procedures.
- ▶ Design interactive and real-life trainings for emergencies, such as a “hands-on” drill on how to find equipment.
- ▶ Remind workers that for eye wash showers to properly flush the eyes, contacts must first be removed.

How?

- Develop a transparent and reliable system for recording hygiene specific occurrences, incidents, diseases and accidents; or, integrate hygiene issues into your existing system. Examples may include:
 - Malfunctioning washing facilities
 - Outbreak of hygiene related diseases
 - Improper washing or handling of contaminated PPE
 - Taking home of contaminated work clothing
- Develop a transparent system for reporting events to the local authorities.



Checkpoint E.3.8. Record and report hygiene specific occurrences, incidents, diseases and accidents

Why?

Keeping track of hygiene-related events at the workplace provides important information to you as an employer on how to make workplace improvements. This also allows the competent authority to understand local and regional trends towards prevention and education efforts.





Module 3: Hygiene

Employers' Checklist

E.3.1	Are handwashing facilities provided that meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.3.2	Are showering facilities provided that meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.3.3	Are emergency washing stations provided that meet the requirements of national laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.3.4	Are appropriate hygiene measures in place for managing, laundering or disposing of contaminated work clothes and PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
E.3.5	Are appropriate food hygiene measures in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?



<p>E.3.6</p>	<p>Are appropriate materials, facilities, and services available for MHM?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
	<p>What action do you propose? Suggestions:</p>	<p><input type="checkbox"/> Priority?</p>
<p>E.3.7</p>	<p>Is information on hygiene-related risks and proper hygiene practices integrated into workplace trainings?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
	<p>What action do you propose? Suggestions:</p>	<p><input type="checkbox"/> Priority?</p>
<p>E.3.8</p>	<p>Is there a reliable and transparent system in place to record and report hygiene specific occurrences, incidents, diseases and accidents?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
	<p>What action do you propose? Suggestions:</p>	<p><input type="checkbox"/> Priority?</p>





WORKERS' ACTION MANUAL: HYGIENE

Workers have a right to a safe and healthy workplace. With this right comes the responsibility of taking the appropriate personal actions to maintain workplace hygiene, like handwashing and reporting hygiene risks. Together with workers, workers' representatives and workers' organizations can use the Checkpoints below to enhance workplace hygiene, reduce worker illness and promote morale, welfare, and productivity at the workplace.



Checkpoint W.3.1. Comply with workplace rules for using and maintaining washing facilities

Why?

Handwashing and showering are effective methods for reducing exposure to workplace germs and hazardous substances. When workers practice good personal hygiene, they not only protect their own health, but also the health of their families, and fellow workers.

How?

- Stay informed of, and follow, the specific workplace rules set out by your employer for handwashing and showering.
 - Attend trainings provided by your employer or by your workers organization.
 - Ask your supervisor for information if you are unclear about workplace hygiene rules.
 - Encourage and support young workers to develop safe hygiene habits.
- Wash hands regularly as instructed, and especially at critical moments
 - Refer to the “before” and “after” table in the Training Guide.
- Shower or bath as necessary to reduce hygiene related problems.

- Wash hands and body with soap and other approved agents, but never with dangerous substances.
- Use your own towel for drying and do not share it with other workers.
- Use washing facilities for the purpose for which they were designed.
- Keep washing facilities in the state that you found them in order to maintain a state of cleanliness.
- Be aware of emergency washing stations and understand how to use them.



Checkpoint W.3.2. Comply with workplace rules for hygienic management of work clothing and PPE

Why?

Workers are responsible for complying with the rules related to the treatment of work clothes and PPE. These items can potentially carry hazardous substances and should be handled according to the appropriate instructions to promote personal hygiene, and to also reduce take home exposures.

How?

- Stay informed of, and follow, workplace rules on the treatment of work clothes and PPE.
- Ask your supervisor for information if you are unclear about clothing and PPE management rules.

If you change clothes and shower at work:

- ❑ Store personal clothing separately from workplace clothing to avoid contamination, for example, in different changing facilities or in different lockers.
- ❑ Wash contaminants off hands and body before changing back into your personal clothes.
- ❑ Leave all work clothes and PPE at the workplace to be managed by the employer. Do not take work clothes or PPE home with you to launder!

If you do not change clothes or shower at work:

- ❑ Wear PPE that is provided to reduce workplace exposures onto your clothes.
- ❑ Take off your work shoes outside your home, so you don't bring workplace exposures into the house.
- ❑ Change your clothes as soon as you come home, ideally before interacting with family, especially children.
- ❑ Wash your hands or shower as soon as you get home.
- ❑ Wash your work clothes as soon as possible, and in a different load from your family's clothes. This prevents contamination.



Checkpoint W.3.3. Comply with workplace rules for food hygiene

Why?

Germs and chemicals can be easily transmitted to foods while preparing, handling, serving, or eating food. Foodborne illness can quickly make you sick and cause unnecessary missed work days and disease.

How?

- ❑ Follow the five keys to safer food.
 - Wash your hands with soap and water (or alternatives) before preparing, handling, serving, or eating food. Wash or shower if needed, and keep dirty workclothes away from eating areas.
 - Separate raw from cooked foods.
 - Cook your food thoroughly to kill germs.
 - Keep your food in safe temperatures (by refrigeration), as necessary.
 - Use potable water for washing foods and cooking utensils, and for cooking.
- ❑ Eat in designated areas only. Do not eat or drink in work areas that contain hazards.
- ❑ Comply with rules for safe and hygienic food service regulations if you work in the food services sector.



Checkpoint W.3.4. Monitor and report hygiene-related risks

Why?

Workplace conditions can quickly and unpredictably change. Staying aware of hygiene risks and risky behaviours, and reporting them when necessary, helps ensure the maintenance and consistency of a hygienic workplace.

How?

- ❑ Be aware of workplace conditions that are unhygienic:
 - Washing facilities that are broken, or which are not maintained.
 - Lack of soap or towels in washing facilities.
 - Contaminated clothing or PPE stored in changing facilities with clean clothes.
 - Lack of services and facilities for MHM.



- Be aware of non-compliance of other workers. For example, workers that:
 - Do not hand wash at critical times, like before serving food.
 - Use personal washing facilities for incorrect purposes, like washing equipment.
 - Wash contaminated PPE into local water sources.

- Report situations or behaviours to a supervisor that may pose a hygiene-related risk. Remember that risks can be potential (may cause a health concern in the future if not remedied); or actual (risks that are actively causing a health concern).



Monitoring and reporting: A trade union and safety committee priority

Actively monitoring the workplace and informing supervisors of potentially dangerous conditions or behaviors is an obligation for workers and their representatives. Reporting dangerous situations or behaviors should not be seen as a negative action. Instead, it should be rewarded as a way to promote sanitary working conditions, thereby making the workplace safe and healthy for everyone present.

Trade unions, workers' representatives, and workplace safety committees play an important role in monitoring and reporting OSH indicators. A study from ILO's Bureau for Workers' Activities (ACTRAV) assessed the measures and structures available at the workplace to improve OSH and working conditions. The study revealed that the presence of trade unions had a positive impact on a number of workplace OSH issues. It was found that workplace improvements were more likely if the results of monitoring of workplace exposures were given to trade union representatives.

Source: Rice, Annie and Repo, Paula (2000). Health and safety at the workplace – Trade union experiences in Central and Eastern Europe, ILO-CIEET, Budapest.



Menstrual hygiene management (MHM)

Girls and women at the workplace have to right to services and facilities at the workplace for adequate and hygienic menstruation management. Female workers should feel empowered to report situations in which their MHM needs are not being met.



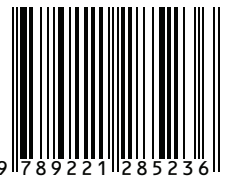
Module 3: Hygiene
Workers'; Workers' Representative; and Workers' Organization Checklist

W.3.1	Is there compliance with workplace rules on the use and maintenance of washing facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
W.3.2	Is there compliance with workplace rules on the use and maintenance of washing facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
W.3.3	Is there compliance with workplace rules for food hygiene?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?
W.3.4	Is active monitoring and surveillance of hygiene-related risks and behaviours by workers in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What action do you propose? Suggestions:	<input type="checkbox"/> Priority?





ISBN 978-92-2-128523-6



9 789221 285236