World Health Organization

International Labour Organization

HealthWISE Work Improvement in Health Services

Action Manual

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International Labour Organization and World Health Organization

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PREFACE

Workers are at the heart of health services, and contribute to the well-being of societies. Health sector workplaces are complex environments which can at times be dangerous; unsafe working conditions can lead to attrition of the health workforce.
Decent working conditions in this sector must take into account workers' health and their well-being, as the quality of care provided by health workers is partly dependent on the quality of their work environment.

This publication, HealthWISE –a joint ILO/WHO product– is a practical, participatory, methodology for improving the quality of health facilities, based on the principles of the ILO's programme "Work Improvement in Small Enterprises" (WISE). It encourages managers and staff to work together to promote safe and healthy workplaces. This, in turn, helps improve health services' performance and ability to deliver quality care to patients. HealthWISE promotes the application of smart, simple and low-cost solutions, by utilizing local resources which lead to tangible benefits to workers and their employers.

ILO and WHO have complementary mandates in health services, particularly on occupational safety and health; in view of this, they have joined forces in developing HealthWISE to assist health policy-makers and practitioners in building their capacity to ensure safe, healthy, and decent working environments for the health services workforce.

In 2010, a tripartite working party of experts comprising workers', employers' and governments' representatives, as well as ILO and WHO specialists, agreed on a framework for improving working conditions, and safety and health for workers in health services. Publications developed as a result of this consultation include the *Joint WHO/ILO/UNAIDS policy guidelines on improving health workers' access to HIV and TB prevention, treatment, care and support services* (2010), and the *ILO-WHO Global Framework for national occupational health programmes for health workers* (2010).

HealthWISE has been developed to support the implementation of this guidance. In its draft form, HealthWISE was piloted in a number of hospitals and health facilities in Senegal, the United Republic of Tanzania, and Thailand in 2011, revised in 2012, and reviewed again by ILO and WHO specialists, as well as the tripartite expert working party in 2013 before finalization.

HealthWISE combines action and learning. The Action Manual helps initiate and sustain changes for improvement and is designed to promote learning-by-doing. The Action Manual is accompanied by a Trainers' Guide that contains guidance and tools for a training course. The CD-ROM accompanying the Trainers' Guide also includes a sample PowerPoint presentation for each training session.

We hope that people utilizing the Action Manual and Trainers' Guide package will in the future develop a network of HealthWISE trainers and practitioners to promote practical approaches that will strengthen health systems in their own countries.

Alette van Leur,

Director,
Sectoral Activities Department,
International Labour Office

Maria Neira,

Director,
Department of Public Health and Environment
and Social Determinants of Health
World Health Organization

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ACKNOWLEDGEMENTS

The development of HealthWISE benefitted from the expertise, and contributions of a large number of experts, constituents and colleagues.

Pilot version (2010):

Manuscript Development Team

Vittorio Di Martino	Consultant
Nelouise Geyer	Consultant

International Labour Organization (ILO)

Julia Lear	Sectoral Activities Department (SECTOR)
Myroslava Protsiv	Sectoral Activities Department (SECTOR)
Lee-Nah Hsu	HIV/AIDS and the World of Work Branch (ILOAIDS), Conditions of Work and Equality Department (WORKQUALITY)
Laura Addati	Gender Equality and Diversity Branch (GED), Conditions of Work and Equality Department (WORKQUALITY)

World Health Organization (WHO)

Susan Wilburn	Interventions for Healthy Environments Unit (IHE), Department of Public Health and Environment and Social Determinants of Health

Resource Experts

Dr Susan Steinman	Dignity Institute, South Africa
Peet J Steinberg	Architect, South Africa
Lilian Paramor	Sister Lilian Centre, South Africa
Mary Higgins	International Council for Midwives (ICM), Ireland
Fazeela Fayers	Education & Gender, Hospital and Other Service Personnel Trade Union of SA (HOSPERSA), South Africa
Alasdair Reid	HIV/ TB advisor, Joint United Nations Programme on HIV and AIDS (UNAIDS), Switzerland

The authors would like to thank all participants of the July 2010 ILO/WHO tripartite experts working party and all those who provided comments and suggestions.

Country pilot teams (2011)

Senegal	Cheikh Makébé Sylla, WISE Consultant, Dakar, Senegal
	Mady Diagne, Subregional Office for the Sahel Region and West Africa, ILO Dakar, Senegal
Tanzania	Suleiman C. Muttani, Mkapa HIV/AIDS Foundation, Tanzania
	Annemarie Kiaga, ILO Country office for Tanzania, Kenya, Rwanda and Uganda, Dar es Salaam, Tanzania
	Frank Muchiri, ILO Decent Work Team for Eastern and Southern Africa, ILO Pretoria, South Africa
Thailand	Dr. Somkiat Siriruttanapruk Ministry of Public Health, Thailand
	Susan Wilburn, WHO, Switzerland

Publication (2013):

Manuscript Development Team

Susan Leather	Consultant

International Labour Organization (ILO)

Christiane Wiskow	Sectoral Activities Department (SECTOR)
Lee-Nah Hsu	HIV/AIDS and the World of Work Branch (ILOAIDS), Conditions of Work and Equality Department (WORKQUALITY)
Lamia Rhoufrani	Sectoral Activities Department (SECTOR)

World Health Organization (WHO)

Susan Wilburn	Interventions for Healthy Environments Unit (IHE), Department of Public Health and Environment and Social Determinants of Health

Review team and ILO/WHO tripartite experts working party (2013):

Bahira Lotfy	Faculty of Medicine, Cairo University, Egypt
Mathias Maucher	Health and Social Services, European Federation of Public Service Unions (EPSU), Belgium
Jadranka Mustajbegovic	School of Medicine, Andrija Stampar School of Public Health, Croatia
Somkiat Siriruttanapruk	Bureau of Occupational and Environmental Diseases, Department of Disease Control, Ministry of Public Health, Thailand
Fazeela Fayers	Education & Gender, Hospital and Other Service Personnel Trade Union of SA (HOSPERSA), South Africa
Janet Asherson	Environment, Safety and Health, International Organisation of Employers, Switzerland
Susan Maybud	Gender Equality and Diversity Branch (GED), Conditions of Work and Equality Department (WORKQUALITY), ILO, Switzerland
Jon Messenger	Inclusive Labour Markets, Labour Relations and Working Conditions Branch (INWORK), Conditions of Work and Equality Department (WORKQUALITY), ILO, Switzerland
Shengli Niu	Labour Administration, Labour Inspection and Occupational Safety and Health Branch, Governance and Tripartism Department (GOVERNANCE), ILO, Switzerland
Laura Addati	Gender Equality and Diversity Branch (GED), Conditions of Work and Equality Department (WORKQUALITY), ILO, Switzerland
Mady Diagne	Subregional Office for the Sahel Region and West Africa, ILO, Dakar, Senegal

LIST OF ABBREVIATIONS

ACH	Air Changes per Hour
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
BBP	Blood-borne pathogens
BCC	Behaviour Change Communication
CAT	Computed Axial Tomography (scanners)
CDC	Centers for Disease Control and Prevention
DEHP	Di(2-ethylhexyl) phthalate
DOT	Directly Observed Treatment
DR	Drug-Resistant
EMAS	Eco-Management and Audit Scheme
EPSU	European Federation of Public Service Unions
EtO	Ethylene Oxide
EWCO	European Working Conditions Observatory
GHWA	Global Health Workforce Alliance
GNP+	Global Network of People living with HIV
H5N1	Influenza A virus subtype H5N1 (bird flu)
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HCW	Health-care Worker
HCWH	Health Care Without Harm
HIV	Human Immunodeficiency Virus
HOSPEEM	European Hospital and Healthcare Employers' Association
IC	Infection Control
ICN	International Council of Nurses
ICRW	International Center for Research on Women
ILO	International Labour Organization
ILO/AIDS	ILO Programme on HIV and AIDS and the World of Work
IPT	Isoniazid Preventive Therapy
IV	Intravenous
JICA	Japan International Cooperation Agency
LED	Light-Emitting Diode
MDR	Multi Drug Resistant
MERS-CoV	Middle Eastern Respiratory Syndrome- Coronavirus
MSD	Musculoskeletal disorder
NGO	Non-Governmental Organisation
NIOSH	National Institute for Occupational Safety and Health (USA)
OHS	Occupational Health Services
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health administration (USA)
PAHO	Pan-American Health Organization
PEP	Post-Exposure Prophylaxis
PPE	Personal Protective Equipment
POP	Persistent Organic Polluant
PSI	Public Services International
PTSD	Post-traumatic stress disorder
PVC	Polyvinyl Chloride
SARS	Severe acute respiratory syndrome
SNA	Swaziland Nurses Association
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
UV	Ultraviolet
UVGI	Ultraviolet Germicidal Irradiation
VCT	Voluntary Counselling and Testing
VOC	Volatile Organic Compound
WHO	World Health Organization
WISN	Workload Indicators of Staffing Needs
XDR	Extensively Drug-Resistant

INTRODUCTION TO HEALTHWISE

What is HealthWISE?

HealthWISE stands for **W**ork **I**mprovement in Health **Se**rvices. Developed jointly by ILO and WHO, it is based on the ILO WISE methodology (**W**ork **I**mprovement in **S**mall **E**nterprises), which has been successfully applied for more than 20 years in 45 countries and adapted to several economic sectors.

The aim of **HealthWISE** is to provide health-care institutions with a practical, participatory and cost-effective tool to improve work conditions, performance, occupational health and safety for health workers, and the quality of health services provided. Improvements are introduced and sustained by the combined efforts of management and staff, brought together in a dedicated team.

HealthWISE is informed by the goal of **decent work**, as defined by the ILO and endorsed by the United Nations General Assembly in 2008.
Decent work sums up the vision of a work environment where income is fair, employment is secure, working conditions are safe and healthy, and social protection is accessible when needed. Decent work is a fundamental right but it also leads to improved productivity, efficiency, and economic security.

Existing WHO and ILO standards, tools and policies for the health services served as a foundation for HealthWISE.

HealthWISE also draws on recognized models such as Total Quality Management and complements existing quality improvement tools such as the *5S Kaizen approach* that is increasingly used in health-care facilities (Ministry of Health and Social Welfare, 2009; Hasegawa and Karandagoda, 2011).

HealthWISE puts the health workforce in focus and addresses topics that are key to delivering quality care. It encourages everyone to participate in making their workplace not only a good place to work but a quality health-care environment appreciated by patients and the community.

HealthWISE is a combined action and learning tool: the Action Manual helps initiating and sustaining changes for improvement and has been designed for immediate use promoting learning-by-doing; the accompanying and more specialized Trainers' Guide contains the tools for an active training programme including a PowerPoint presentation for each module.

Who is HealthWISE for?

Anyone working in health care can use HealthWISE to improve their practice and place of work, whatever its size. It is, however, most effective when implemented by a team representing both managers and workers; staff at all levels and in all departments should be involved, because they all have a stake and role in improving their workplace and practices.

The HealthWISE approach

HealthWISE is led by manager-worker collaboration and applies core WISE principles:

- Build on local practice and resources
- Focus on achievements
- Promote learning-by-doing
- Encourage exchange

A 'step by step' approach to action

The Action Manual and its accompanying Trainers' Guide are organized around a checklist to guide each action. Every one of the eight modules sets out key checkpoints to help you decide on priorities for action and plan accordingly; instructions for using the Action Manual are provided in the next section while instructions for trainers are contained in the Trainers' Guide.

A dedicated team

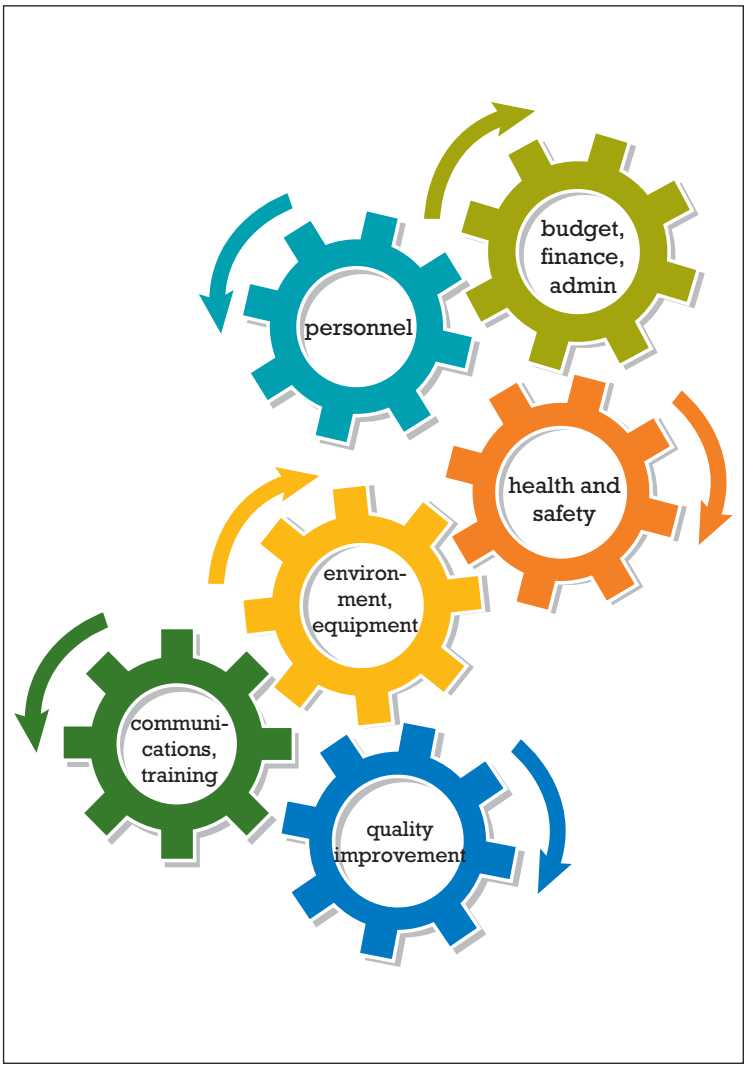
The ILO's 20-plus years of experience in working through WISE have shown that joint action by managers and workers –given their complementary roles, responsibilities and experiences– is most effective in promoting decent work. Setting up a small team (for ease of reference we will call it the *HealthWISE team*, but the name itself does not matter) brings benefits in terms of the clearest vision of what improvements are needed; the fullest sense of ownership of the change process; and the most effective implementation of improved practices.

- When the modules refer to "you", this is mainly intended to mean the HealthWISE team but includes any user of the Manual.

An integrated approach

The HealthWISE Manual uses the term 'integrated' in several places, linked to planning and development, so we need to be clear about what is meant by this. A health-care facility has many different parts (units, functions, tasks, responsibilities, etc.) and –like any machinery– for it to work efficiently all the parts need to connect and engage. The aim of HealthWISE is to help you develop a strategic vision and plan which brings together the separate pieces of the health facility and considers them as parts of a whole. In this way, changes to one unit or area take into account the possible consequences, good or bad, for all the others. Figure I.1 illustrates this approach.

Figure I.1
An integrated approach to planning



There is no hierarchy and the main elements are all connected in order to deliver the service that the facility provides, that is: quality patient care.

The following example explains an integrated approach in practice.

Action example:

An integrated approach to needle safety

You want to improve injection safety and the safe handling of sharps, which at present are usually re-capped; you've tried before, but old habits die hard. This time the team looks at all aspects of the issue: equipment, procedures, behaviour, and education.

You introduce a protocol which combines all these aspects, and support its implementation by ensuring that improved equipment and facilities are available:

- staff start by discussing the failures of existing policies or work habits so that they agree on what needs to change;
- sharps disposal boxes –clearly labelled and puncture proof– are installed and fixed at sites where injections are given;
- safe needle devices are introduced;
- staff are trained in the use of new equipment, with demonstration of one-handed needle recapping where recapping is unavoidable; a 'buddy' system to help remind peers not to recap may be used for a limited period;
- posters, signs, or other visual materials are provided which remind staff about new practices;
- consultation takes place with relevant staff to assess injection use and reduce its frequency if possible.

It is clear that if only one measure is introduced, rather than a combination as set out above, it will be more difficult to make the changes work.

HOW TO USE THE ACTION MANUAL

This section introduces the contents of the manual and shows how it can be used.

The Action Manual covers the HealthWISE topics in eight modules. Each module briefly introduces an issue and the objectives it aims to achieve; it sets out a list of four or five key points that are central to the topic, and then provides information and guidance on each point. Examples of good practice are included, as are references and web links, and in some cases additional factsheets with information of particular importance.

Overview of modules

Module 1: Controlling occupational hazards and improving workplace safety

Safety is a high priority, for the sake of staff as well as patients – a hygienic, safe and hazard-free environment is essential to the delivery of quality health services. This module looks at ways of preventing or reducing hazards through implementing an integrated health and safety management system. The next four modules examine specific hazards, both physical and psychosocial, in more detail.

Module 2: Musculoskeletal hazards and ergonomic solutions

This module deals with musculoskeletal disorders – the sorts of injuries which can arise when staff lift weights that are too heavy for them, work in awkward positions, or carry out repeated actions. They are among the most common causes of staff injury and absence. The module helps you plan a set of ergonomic measures that have proved to be effective in a range of settings.

Module 3: Biological hazards and infection control, with special reference to HIV and TB

Biological hazards also represent a fundamental challenge to the health sector and are of great concern to workers. The spread of HIV, and its frequent co-infection, TB, has caused particular difficulties in medical and nursing terms and exposure at the workplace worries health workers in particular. This module deals with the ways of identifying and controlling biological risks across the board, with particular reference to some of the tools available to respond to the risks of HIV and TB at the workplace.

Module 4: Tackling discrimination, harassment and violence at the workplace

The hazards examined in this module are not necessarily recognized as risks to workplace safety, but they are as real as the threat of infection or the danger of fire –and need to be handled as firmly and as effectively. The module looks at three aspects of discrimination and violence: discrimination and violence suffered by staff from patients; by staff from co-workers; and discrimination and violence suffered by patients from the health workers in whose care they've been placed.

Module 5: Towards a green and healthy workplace

Public awareness about environmental issues has grown over the last few decades, from the effects of carbon emissions and challenges of waste management, to the depletion of fossil fuels and water supplies. This module examines how even a small health facility can make a contribution to the reduction of waste and the sustainability of resources, bringing potential cost savings, as well as environmental benefits with postive effects on the health of workers, patients, and the community.

Module 6: The key role of staff: recruitment, support, management, retention

The health facility is nothing without staff –workers and managers, medical and non-medical. Making sure that you have sufficient numbers of qualified staff presents one set of challenges. Equally important is the need to value, support, inform, train, and motivate them. This module helps your facility improve practice in these areas.

Module 7: Working time and family-friendly measures

The organization of working time is a major responsibility in health facilities, most of which need to operate 24 hours a day. This module helps you develop protocols and procedures that balance the need of the workplace to deliver essential services with the personal responsibilities of workers and their need for vital rest.

Module 8: Selecting, storing and managing equipment and supplies

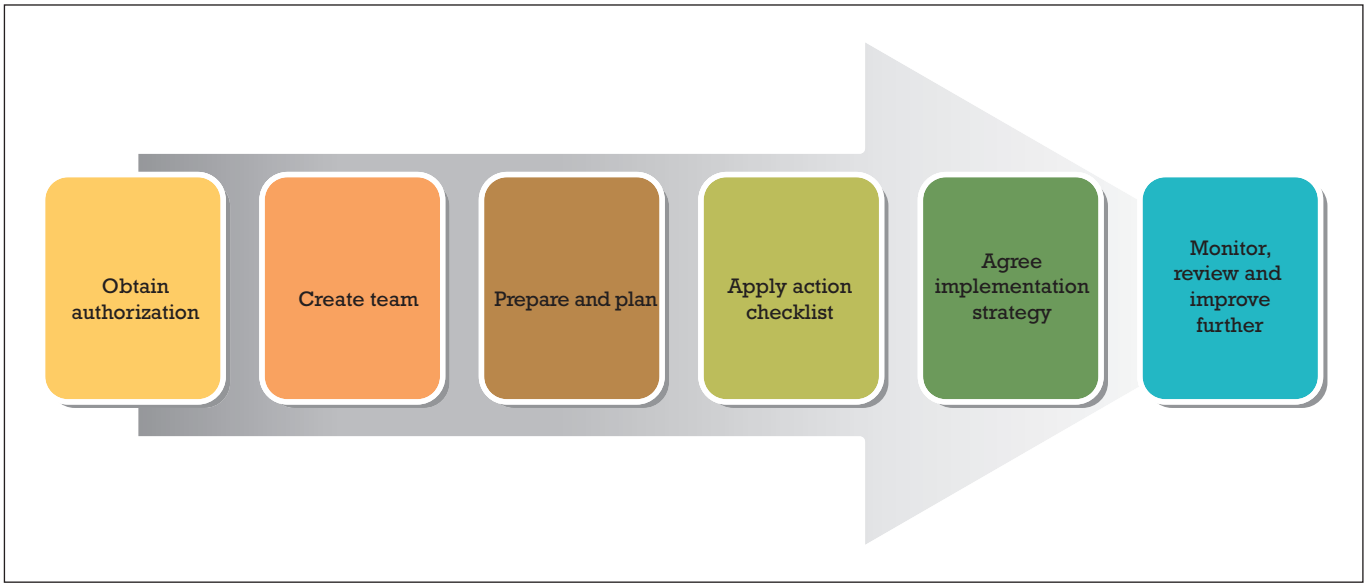
Ensuring an uninterrupted supply of appropriate and quality materials, tools, and equipment supports timely and efficient service delivery. This module connects the issues of selecting, storing and safe handling of equipment and supplies, and encourages you to plan for them in an integrated manner.

We hope the advice and good practices in this manual provide useful reading for any health worker and manager who picks it up. However, in order to get the most out of it **a planned approach** is necessary (see Figure I.2), involving the workforce as a whole, and moving towards systematic and sustainable improvements.

The process of this planned HealthWISE approach –how to get started, plan, take action, and monitor and sustain improvements– has been broken down into steps that you can take one by one.

Figure I.2

Planned approach to sustainable improvements



Step one: Obtain authorization

The person or committee introducing HealthWISE into their workplace will first need permission from the responsible individual or body. This may require some advocacy on your part; you should emphasize that the benefits will be worth the investment and have ready some of the case studies to show as evidence. This is not just about getting permission, it will greatly assist the successful implementation of improved working practices if you can secure the active commitment and ongoing support of management.

Step two: Build the team

It may not be possible to set up a new team, but it is worth considering its advantages in terms of spreading the workload and helping communication and coordination. On the other hand an existing team, such as an OSH committee, may be well placed to take on the necessary quality improvement tasks. If all the responsibility rests on an individual, make sure that she/he has back-up from a focal person(s) in the different units and is able to bring them together for occasional exchange of results and reflections.

If you're setting up a team, make it as broadly representative as possible. This is likely to spark more ideas, help communication across all levels and sections of the workplace, and promote more comprehensive and coordinated change. Consider inviting technicians as well as nurses, administrators as well as physicians, and representatives of key interest groups such as the OSH committee, trade union or workers' committee as well as management –but not so many as to be unmanageable!

- It is important to take account of existing structures, inform all relevant groups and individuals, and encourage synergies, not duplication.

Step three: Prepare and plan

The process of introducing and implementing improvements will involve good preparation and planning. Don't rush into action; time spent gathering information, consulting, reflecting and planning is time well spent.

The checklist in the next section helps you identify where action is needed and what are the priorities. You can also prepare yourself by reading through the modules first to get familiar with the issues and then use the checklist with more background knowledge. We advise applying all the modules over the long term, but you need to decide which ones would be most useful to tackle first. This depends entirely on the specific needs of your health facility or workplace, and it is therefore helpful to discuss the following questions in the team:

- What technical or working area do you believe at this stage most *urgently* needs improvement?
- Where would it be *easiest* to start, taking into account available human and financial resources?

The answers to each question may be different, but the team should weigh both and then choose an area of action (see Step five).

Step four: Start using the checklist

The checklist in the next section is the starting point for assessing the workplace. It is a simple tool to help you identify issues, gaps, and needs at your workplace and then decide where it is necessary to take action and what the priority areas are. It is easily used by the team, and can be understood by the staff as a whole and encourages consultative and coordinated approaches to introducing improvements. The checklist corresponds with the checkpoints in each module. Possible lines of action are set out on the pages following each checkpoint.

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

How to use the HealthWISE Checklist

The checklist is an assessment tool for use in the health sector workplace. It is helpful if you have participated in HealthWISE training, but this is not essential.

The checklist is not intended to judge a health-care facility but to aid planning. It provides a starting point for:

1. Identifying areas where improvements can be made.
2. Planning and monitoring of improvements.
3. Recognizing good practices.

The checklist questions may require you or the team simply to observe working conditions –for example the height of lab benches or the accessibility of a defibrillator– or they may need more detailed discussion with relevant staff. Be sure to reassure staff too that they are not being judged; on the contrary, their views and knowledge will be invaluable in identifying issues, gaps and opportunities.

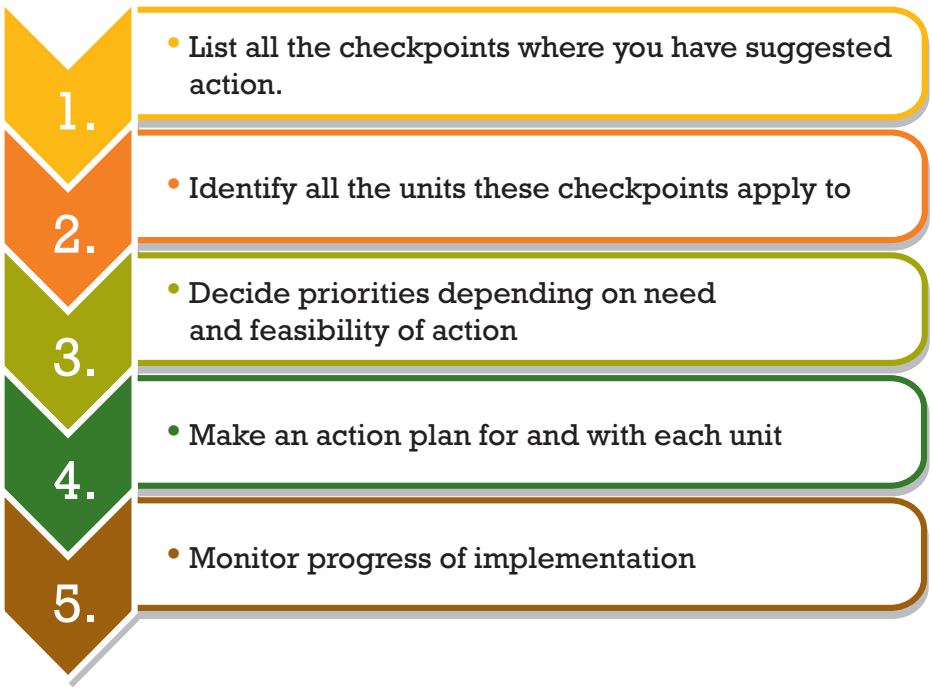
Step five: Work out an integrated strategy to implement improvements

After using the checklist you should have a much clearer idea of where action is needed. The implementation strategy is a blueprint for action to address issues for improvement. Start by reviewing all the points on the checklist where you made suggestions under "WHAT ACTION DO YOU PROPOSE"; tick the "PRIORITY" box for actions that you consider to be a high priority and for which you have ideas for feasible solutions. Agree with your HealthWISE team and with staff on an order of priority and identify the necessary measures. Assign responsibilities to a person or team and agree on a timetable. There are still important decisions to be made about how to introduce and sustain the new measures, so start with the most feasible changes and set achievable goals and indicators of progress.

Changes will be easier to sustain over the long term if you build them into existing structures and procedures (Figure I.3)**.**

Figure I.3

How to implement sustainable changes



The action plan at unit or department level can be developed as follows:

- staff are informed and mobilized to participate;
- staff take part in consultations with the HealthWISE team or coordinator, focusing on technical areas covered by the checklists –aims and priorities are agreed;
- staff draft an action plan –core elements are the proposed activity, the timeframe, responsible person(s) and expected results (see below for a template that can be used or adapted for this);
- staff select an individual or small team to monitor progress and report back to the HealthWISE team.

Example of action plan and implementation in HealthWISE pilot health centre in Tanzania.

s/n	Target Area	Challenges	Activity	Time Frame	Resources	Cost	Source of funding	Responsible person	Comments
01	OPD	Improperly arranged equipment according to the needs	Reallocation/rearrangement of equipment	24 hours	- Kwa-Mtoro RHC Staff -Health wise TOT	Tshs0/-	Nil	All staffs	-Task successfully completed - safety boxes added -
Benefits:									

Before

After

Source: Health wise - field visit and workshop report, 2011

ACTION PLAN: suggested template

Unit name:

Technical area	Description of problem	Proposed improvement	Date of completion	Who is responsible	What is needed	Current status at [date] [1]

[1] To save time you can use terms such as: * started, ** advanced, *** completed

Example of an action plan: HealthWISE pilot hospital in Dakar, Senegal, 2011

Technical area	Description of problem	Proposed improvement action	Date of completion	Who is responsible	What is needed	Current status (September 2011)
Management and motivation of staff	Staff functions and activities not formally described	Update and generalize job descriptions • Hold information meetings • Review tasks • Develop job descriptions • Share and validate job descriptions • Print and distribute the job descriptions • Follow – up	October 2011	Human Resources Department	Staff time Human Resources officer Computer Paper and ink cartouche for printer	*started
Management of occupational hazards	Staff don't have sufficient knowledge on HIV and AIDS and the ways of transmission	Organize staff training on HIV and AIDS • Inform Management • Estimate costs • Disseminate formal announcement to inform staff • Conduct training	November 2011	Occupational health doctor Infection control officer Quality assurance Officer	Staff time for participation Room for training	*started

Source: Adapted from Diagne M, Sylla CM (2012). HealthWISE Projet Pilote au Sénégal – Rapport Final. Dakar: Bureau international du Travail

Step six: Monitor, review and keep improving

Monitoring should be built into the implementation strategy from the start as tracking progress and assessing its impact is important to demonstrate the effectiveness of your action and encourage people to keep going. Select some indicators to help you track progress, these need to be specific to each module, for example:

- A decline in the numbers of discarded drugs because they are out of date (Module 1)
- Reduced absenteeism/staff turnover (Modules 2, 3, 7).

Take pictures!

Photos taken during the use of the checklist while walking through the workplace show the situation of concern BEFORE an intervention. Take another picture AFTER the improvement action.

This is a powerful tool to demonstrate the achievements; it boosts the morale of all involved and encourages others to support the measures for further change.

Change for improvement

Staff support for change

Using the checklist and consulting staff on the results is an important step in raising awareness among a cross-section of staff and managers. This will help them understand the proposed changes more easily and allow them to be more motivated to make sure they work.

People resist change when they do not understand its purpose, if they fear it will impact negatively on their employment or income, or if they expect to be blamed if it fails. For this reason we put a constant emphasis on the need for consultation and collaboration –if the workers and managers help shape the changes which concern them they will own the changes and be committed to making them work.

Fears should be addressed directly and the benefits of change made clear. Invite suggestions and ideas, and make sure that workers know they can report problems. Not only workers but their representatives should be involved in preparatory discussion of the possible consequences on the volume or difficulty of work, job security, pay, levels of responsibility, supervision arrangements, etc.

Ensure positive feedback for the staff's efforts in contributing to the improvement process. The team should pay close attention to developments, praise progress, remove obstacles, and react to any tendency to return to the old ways. Try to make sure that the management as a whole is actively supporting the process as well.

Appreciative Inquiry

You may also like to consider an approach to organizational development which has helped us in the preparation of the manual, and which could help you in implementing the measures you select. It's known as Appreciative Inquiry –see what you think:

This model assumes that the questions we ask will tend to focus our attention in a particular direction. Most methods of assessing a situation and then proposing solutions are based on a *deficiency* model. They ask questions such as "What are the problems?", "What's wrong?" or "What needs to be fixed?" The danger is that excessive focus on dysfunctions can actually cause them to become worse or impede improvement.

Appreciative Inquiry takes a different approach, it starts with the belief that every organization, and every person in that organization, has positive aspects that can be built upon. It asks questions like "What's working well?", "What's good about what you are currently doing?" "What can we do better?" This approach argues that when all members of an organization are motivated to understand and value the most favourable features of its culture, it can make rapid improvements.

Drafting, agreeing and implementing a workplace policy or agreement

A number of the modules suggest developing a policy for a given area, as a way of guiding and monitoring action; for example, occupational safety and health, maternity protection, or discrimination.

A workplace policy or collective bargaining agreement:

- provides a statement of commitment and a framework for action;
- lays down a standard of behaviour and gives guidance to supervisors and managers;
- helps employees understand their rights and responsibilities.

However this approach may not be the norm in your country; for example:

- Policy may be developed at national or sectoral levels, not in individual workplaces.
- The workplace may establish rules or protocols to guide its practice, rather than policies.

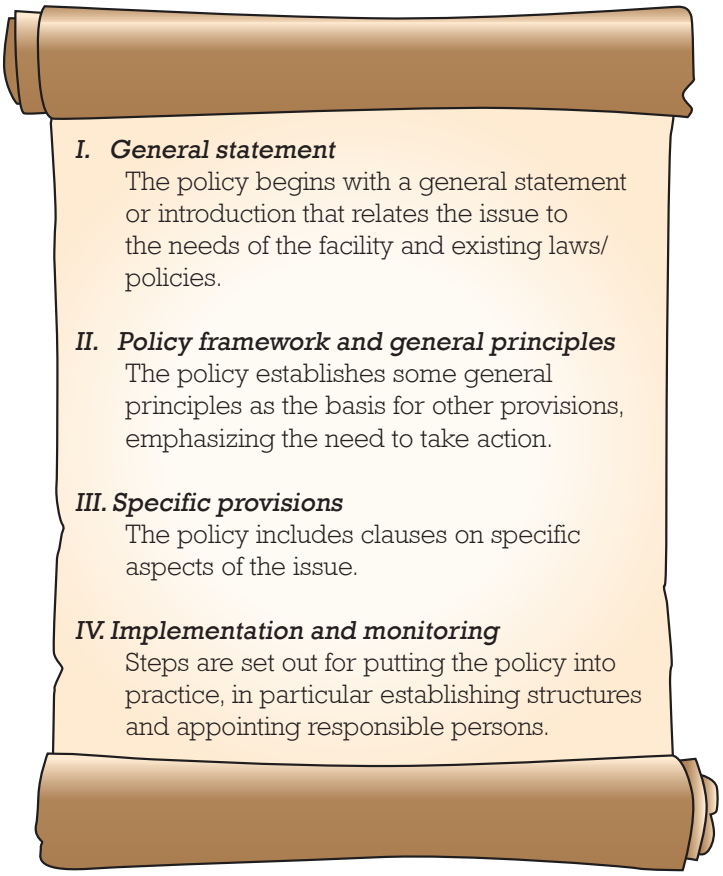
The guidance offered below may not therefore be fully relevant, but we still advise you to consider the impact of a policy statement or expression of commitment to take action in a given area, however brief it may be.

Form of the policy

A policy should be developed through employer-worker collaboration.

It may be very brief, such as a short statement of commitment, for example: ''This is a smoke-free environment,'' or ''In this health facility there is zero tolerance for violence perpetrated against staff, patients, visitors or other persons.''

It may be a detailed policy or agreement specifically on one issue – for example HIV and AIDS, or part of a broader policy or agreement that already exists.



Steps for developing workplace policies

The process of developing a workplace policy includes the following steps:

1. Agree on the issue that needs to be addressed.
2. Prepare a work plan. This process must include the participation and support of management, frontline workers and labour representatives.
3. Gather information and determine the needs of staff and management.
4. Check national laws and relevant regulations or protocols.
5. Write up the policy.
6. Consult all relevant stakeholders on the policy and revise accordingly.
7. Obtain approval of the policy.
8. Disseminate the policy and ensure staff awareness.
9. Draw up an implementation plan with clear time frame and staff assigned clear roles.
10. Monitor periodically to check if it is necessary to amend or extend the policy.

References:

- Hasegawa, T.; Karandagoda, W. (Eds). 2011. *Change management for hospitals through Stepwise Approach, 5S-Kaizen-TQM*
  Available at: http://www.jica.go.jp/activities/issues/health/5S-KAIZEN-TQM/pdf/text_e01.pdf
- Ministry of Health and Social Welfare, Tanzania. 2009. *Implementation guideline for 5S-CQI-TQM approaches in Tanzania: "Foundation of all quality improvement programme"*.
  Available at: http://www.jica.go.jp/activities/issues/health/5S-KAIZEN-TQM/pdf/guideline.pdf

HealthWISE Checklist

HealthWISE Checklist

This checklist is the first step in the **HealthWISE** process; it is a workplace assessment tool for identifying and prioritizing areas of action for improvement, and is designed to be filled out while performing a walk-through of the health facility.
It is best to engage people who perform different types of functions in the health facility; for example, workers and managers can complete the assessment list in small groups or separately, and then discuss the responses as a group. This participatory approach will provide a variety of perspectives and a more comprehensive basis for analysing possible solutions.
Using this checklist first will give you an overview of areas where you can propose to take action and help you determine what to prioritise. These priorities guide you in planning for improvements.

Preparations:

- Make enough photocopies of the assessment list so that everyone/every group can complete the forms separately. Read the checklist questions before you start the assessment.
- Ensure availability of cameras to take pictures of examples of good practices and issues of concern; the aim is to take another picture after improvement action has been implemented. These before-after-photos are powerful tools to visualize achievements – it motivates and encourages everybody to keep going and convinces decision makers or sponsors to provide support. Pictures of good practices can be used as examples for other units to inspire their solutions.

How to use the checklist:

1. Define the issues or workplace area to be assessed.
In the case of a small health facility, the whole workplace can be assessed. In the case of a larger health facility, particular work areas can be defined for separate assessments.

2. Read through the checklist and take time walking around the work area, take photographs and /or detailed notes of issues that are a cause for concern or which could be good practice models. Ask staff of the unit when you need more information from their experiences.

3. Consider each question carefully;
Tick "YES" or "NO", according to your observations and information.
Ticking YES *means the condition or measure described in that question exists at the work place. However, one could still consider actions for improvements.*
Ticking NO *means the condition or measure mentioned in the question is not available at the workplace. In that case, ACTIONS ARE NEEDED to ensure they are implemented.*

4. Write your ideas and suggestions for actions and improvement under *WHAT ACTIONS DO YOU PROPOSE?* Suggestions

5. Tick the *PRIORITY* box for actions that you consider to be a high priority and for which you have ideas for feasible solutions.

6. Once the forms have been completed, note all the points on the checklist where you ticked the *PRIORITY* box; agree on an order of priority, and then identify the necessary measures.

7. Discuss and develop an action plan: start with the most feasible changes and set achievable goals. Agree on a time table and assign responsibilities. Build the changes into existing structures and procedures as far as possible.

HealthWISE Checklist

Assessment information	
Name of institution	.....
Unit / work area assessed	.....
Name of the assessor / team	.....
Date of assessment	.....

Module 1

Controlling occupational hazards and improving workplace safety

1.1	Are regular procedures applied to identify and assess workplace hazards (including physical, chemical, biological, ergonomic and psychosocial hazards)?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
1.2	Are there measures in place for hazard control and workplace safety?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
1.3	Is the reporting of incidents and disclosure of illness encouraged through a "no-blame" culture?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
1.4	Is there an occupational health and safety system implemented at the worklplace, including hazard prevention and control as well as the provision of occupational health services?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 2

Musculoskeletal hazards and ergonomic solutions

2.1	Is there regular assessment to identify and prevent ergonomic hazards that arise from the lifting and transfer of patients or equipment?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
2.2	Are equipment and work practices suitable to reduce heavy lifting, pushing and pulling?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
2.3	Are work spaces designed to reduce strain, repetitive movements, and poor posture?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
2.4	Is there awareness raising and staff training on good ergonomic practice (e.g. skill practice with lifting equipment)?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 3

Biological hazards and infection control, with special reference to HIV and TB

3.1	Is there a routine to identify and assess biological hazards at the workplace?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
3.2	Are measures taken to prevent and control blood-borne hazards such as HIV and hepatitis?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
3.3	Are health workers, patients and visitors protected from exposure to air-borne hazards such as TB?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
3.4	Is a comprehensive workplace HIV and TB prevention and care programme implemented?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 4

Tackling discrimination, harassment and violence at the workplace

4.1	Is action taken to protect staff from violence?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
4.2	Are specific measures taken to address stigma and discrimination?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
4.3	Is there awareness raising and training about violence in the health workplace?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
4.4	Is the institution committed to a fair and respectful workplace?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 5

Towards a green and healthy workplace

5.1	Are there measures in place to identify, assess and reduce environmental health hazards?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
5.2	Is water conservation practiced?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
5.3	Are there measures to assess and improve energy efficiency?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
5.4	Does this health-care organization have a green strategy?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 6

The key role of staff: recruitment, support, management, and retention

6.1	Is a long term plan for staffing needs in place, with clear job descriptions?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
6.2	Are facilities for staff available for washing, changing clothes, resting, and eating?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
6.3	Are there non-monetary benefits and in-service training in place?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
6.4	Are communication, teamwork, and supportive supervision promoted?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
6.5	Are contract practices, grievance procedures, and disciplinary measures in place and are they transparent and fairly applied?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 7
Working time and family-friendly measures

7.1	Is working time scheduled in a way to reduce long hours and minimize irregular shifts?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
7.2	Do the staff get enough rest during work and between shifts and is overtime kept to a minimum?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
7.3	Are flexible working time and leave arrangements implemented?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
7.4	Are family, home, and social responsibilities of staff taken into account when planning work schedules?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
7.5	Are maternity protection and parental leave provided, including arrangements for breast-feeding?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 8

Selecting, storing and managing equipment and supplies

8.1	Are there written plans for equipment and supply needs for all units?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
8.2	Is the appropriate equipment selected for its safety as well as affordability and availability?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
8.3	Is there secure, safe, and clearly-labelled storage space for all items?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
8.4	Is there a system for stock-taking and maintenance in place, including hazard control?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority
8.5	Are staff trained on the safe use and maintenance of equipment, especially new products or models?	→	☐ Yes ☐ No
	What action do you propose? Suggestions:		☐ Priority

Module 1:

Controlling occupational hazards and improving workplace safety

Health and safety are fundamental to your work environment for the sake of staff as well as patients, and quality care is best provided where staff can work in a safe and secure environment.
Prevention is the first principle of occupational safety and health (OSH): if you prevent incidents you preserve well-being, increase or maintain productivity, and avoid the costs that can be incurred due to accidents. Where complete prevention is not possible the aim should be to reduce the risk and manage any consequences effectively and fairly.
Because patient care is the priority of any health service, many people do not think about the health needs of staff, but they too are exposed to a number of work-related risks.

In Canada – out of 34 occupational categories – more work days were lost among nurses than any other category bar one (Statistics Canada, 2012).
In Ireland, illness rates in the health sector ranked second after agricultural workers (EWCO, 2010).

An integrated system is the most effective for dealing with these risks; in fact, having a **system** in place for managing health and safety is **the second principle** of OSH.

The objectives of this module are to help health facilities to:

- Identify and assess workplace hazards.
- Develop a system for prevention and control.

The categories it examines are:

- Physical hazards (e.g. noise, X rays)
- Chemical hazards (e.g. cleaning fluids, cytotoxic drugs)
- Biological hazards (e.g. blood, airborne droplets)
- Ergonomic or work design hazards (e.g. lifting patients, repetitive movements)
- Stress and psychosocial hazards (e.g. discrimination and violence)

This module picks up some of these issues in order to provide an overview on major hazards and a workplace safety system (checkpoint 1.4), while the next four focus on some of the hazards in greater detail. The greatest challenges for the health and safety of health workers are ergonomic and biological hazards. **Module 2** examines one of the most frequent problems for medical staff - especially nurses, midwives, orderlies, and porters - **musculoskeletal strains and injuries**. **Module 3** focuses on biological hazards, with a focus on the particularly severe consequences for individuals and workplaces from three biological hazards: HIV, TB, and Hepatitis. **Module 4** discusses **psychosocial pressures**, while **Module 5** covers the benefits of working towards a 'green' health workplace, with a particular emphasis on the management of waste, which reduces some of the risks that result from chemical and biological hazards.

Adapting the module to your situation

Not every workplace faces every hazard – use the checklist as a basis for identifying those that are the most serious risks in your own workplace. You may think that managing these risks will be too costly, but the most effective response doesn't cost anything, which is to change the attitudes of staff, and the culture of your institution, so that health and safety becomes the default position, where all staff look out for potential risks and for ways of preventing them; and bear in mind that not taking action will cost more in the long run.

Checkpoints for Module 1

1.1	Identify and assess workplace hazards
1.2	Put in place measures to control hazards and improve safety
1.3	Promote a 'no blame' culture which supports the reporting of incidents and disclosure of illness
1.4	Develop a system for workplace safety and the prevention and management of hazards

Checkpoint 1.1

Identify and assess workplace hazards

WHY?

Hazard means danger – no one should be expected to work in a dangerous place.
Inaction is costly, in both human and financial terms, but appropriate measures require a full understanding of the hazards and risks. This checkpoint covers two connected and essential stages in your health and safety planning: controlling hazards depends on **recognizing** them, so identification comes first; the second step is to **assess the type** and **severity** of the risk.

Note: Checkpoint 1.2 discusses the measures to be taken to control the hazards.

HOW?

1. Identify hazards

- Getting feedback from staff provides the most valuable information about hazards, because they have hands-on experience of the equipment and procedures, but it is most useful to combine a number of approaches:
  - Use injury and illness records - review workers' compensation data and check the incidence, mechanism, and cause of injury, and the cost to the organization. Note that the confidentiality of medical data should be protected, so you will need to agree upon an approach with the responsible staff which respects confidentiality, either by ensuring anonymity or using data that is in the public domain (e.g. compensation data).
  - Do walk-through surveys, inspections, or safety audits in the workplace in order to evaluate the organization's health and safety system. Be sure to get the permission of unit heads, involve the OSH representative, and fully inform staff.
  - Investigate workplace incidents and 'near miss' reports – in some cases there may be more than one hazard contributing to an incident.

Be aware of the different categories of hazards and consider the examples given in Factsheet 2.1 in the Trainers' Guide – which ones can be found in your workplace?

2. Assess risks

Risk assessment has two main parts: you need to evaluate how severe the risk is in terms of the effects of the hazard and how likely it is that the risk will occur. You can make a form for the team for each unit to fill in based on a simple table (see below). Think not only about existing risks but also problems that could develop in future; for example, if new equipment is obtained or procedures are changed. Investigate hidden problems that may not have been reported but could lead to risks. Again, the team should discuss the points raised with the staff concerned in order to get a full picture.

Workplace hazard assessment form

Date of assessment: .....

Carried out by: .....

Name of unit: .....

Hazard identified: .....

.....

Frequency/ likelihood ▸ Consequences ▾	Often / very likely*	Sometimes / quite likely	Seldom / unlikely
Fatal			
Severe injury / illness			
Minor injury / illness			

**Give a benchmark in terms of number of incidents per year, based on average numbers for the same type of incident.*

REMINDER

Hazard is the potential for harm or adverse effect on the health of an employee or patient; anything which may cause injury or ill health to anyone at or near a workplace is a hazard.

Risk is the likelihood that a hazard will cause injury or ill health to anyone at or near a workplace. The level of risk increases with the severity of the hazard and the duration and frequency of exposure.

Exposure occurs when a person comes into contact with a hazard.

For example, noise is a hazard, deafness is the risk. Exposure to noise can be prevented by isolating noisy machinery from people or by people wearing hearing protection.

Toxic chemicals used in laboratories are a hazard, poisoning is the risk. Exposure to toxicity can be prevented by substituting other chemicals, safe storage in adapted containers and cupboards, or the use of Personal Protective Equipment (PPE).

Checkpoint 1.2

Put in place measures to control hazards and improve safety

WHY?

- Once the hazards have been identified and assessed, it is only logical to take appropriate measures to manage those hazards and thus improve safety in your workplace.
- If your workplace is not taking all the measures it could, the repercussions will be costly both in terms of human and of financial resources.

HOW?

1. Be aware of relevant national legislation on OSH, international guidelines (see Checkpoint 1.4), as well as trends and developments in workplace health and safety. It is recommended to involve an occupational health and safety specialist to provide technical guidance and help train the team.
2. Introduce measures for each category of hazard as follows, start with the hazards you have already identified as high risk, whether they cause minor problems frequently, or major problems sometimes.

1.2.1. PHYSICAL HAZARDS

- **Avoid temperature extremes**, as this benefits patients as well as staff. 'Hot spots' for workers include kitchens, boiler rooms, and laundries. In order to reduce the impact of heat:
  - schedule heavy work at the coolest time of the day and allow frequent rest breaks in cool areas;
  - install or improve ventilation, provide fans;
  - have cool drinking water available;
  - provide cool areas for rest breaks;
  - train workers to recognize and report symptoms of heat stress.

Safe handling of hot materials in the kitchen

Situation: In 2008, 13 government hospitals in Thailand assessed health and safety hazards in all working areas. The most serious risk to worker safety was identified in the hospital kitchen areas. Staff were prone to burns and other injuries while moving hot and heavy items.

Action: Trolleys were provided where hot items could be placed when removed from the stove and then transported to other workstations and patient areas.

Result: Staff injuries were reduced.

Cost and sustainability: This intervention cost little and is still being applied.

Personal communication from Somkiat Siriruttanapruk, Bureau of Occupational and Environmental Diseases, Ministry of Health, Thailand, June 2010.

- **Improve ventilation:** ventilation means the replacement of internal contaminated air with fresh air from outside – it is not the same as circulating air within an enclosed space (which increases thermal comfort). Ventilation is useful in reducing the effects of heat and helping to manage some chemical and biological hazards. Encourage natural ventilation from open windows, especially on opposite sides of rooms, thus providing cross-ventilation. Module 3 gives fuller guidance in relation to the prevention of tuberculosis (TB).
- **Ensure adequate lighting:** studies on lighting improvement have shown a 10 per cent performance increase and 30 per cent error reduction when adequate lighting is provided (Hunter, 2009). Low-cost measures include making better use of daylight (including keeping windows clean), and choosing light coloured matte paint which diffuses light and reduces glare. Bulbs can be replaced with long-life, low energy alternatives.
- **Reduce noise levels:** apart from causing stress and damage to eardrums, excessive noise makes diagnosis and communication more difficult, as does a lack of light. Noise management may involve moving the sources of noise, installing insulation, mending or improving equipment, reducing time

spent exposed to the noise, or providing ear protectors.

- **Eliminate uneven floors and clear obstructed passageways:** surfaces where people walk or push equipment need to be smooth and even but non-slippery. Make sure that spills are cleaned up quickly and wet surfaces dried, or roped off if necessary. Stairways must be safe, with railings to hold on to and prevent falls – there should be slopes or elevators as alternatives for wheelchairs and trolleys, but ensure the gradient isn't too steep to manage safely. Remove trip hazards in a cluttered corridor.

SAFE PATHWAY AND SLOPES

Situation: In 2008, 13 hospitals in Thailand assessed health and safety hazards in all working areas. The assessment identified poor paths with uneven surfaces and inappropriate slopes which created unsafe walkways for patients and staff.
Action: Measures were taken to repair the pathways, replace steps by slopes, and make the gradient of slopes less steep.
Result: Pathways and slopes became easier and safer to use.
Cost and sustainability: approximately USD 3,000; the pathways are still in use.

Personal communication from Somkiat Siriruttanapruk, Bureau of Occupational and Environmental Diseases, Ministry of Health, Thailand, June 2010.

- **Remove electrical hazards:** electrical faults are frequent causes of fires and put workers and patients at risk of electric shocks that may be fatal. Some basic rules:
  - All equipment should be earthed and circuits insulated and protected with circuit breakers or fuses.
  - Do not overload plug points.
  - Include regular checks in your maintenance plan (and note that repair or maintenance should only be done when the power is off).
  - Be certain that electrical power can be shut off immediately in case of emergency.
  - Eliminate trailing wires that could be tripped over and easily damaged.

REMINDER

In the event of an electrical accident

Nominate first aiders /attendants in the workplace who can help a person suffering an electric shock, but ensure that basic information is provided to all staff.

- Turn off the power and then remove the person from the source.
- If the switch is not accessible, find a long, dry, clean and non-conducting object (like a wooden broom) to remove the person from the source or the source from the person.
- Once the person is clear of the power source, be prepared to administer mouth-to-mouth resuscitation or cardio-pulmonary resuscitation.

  - Make sure you have a back-up plan and equipment in the event of power cuts.

- **Reduce exposure to radiation:** ionising radiation is produced by X-ray machines, CAT scanners, fluoroscopy, angiography, therapeutic radiography, and nuclear medicine; protective measures can include:
  - limiting the time of exposure and avoiding unnecessary exposure;
  - increasing the distance from the source of exposure;
  - using improved equipment;
  - shielding the source and the worker with protective material, no part of the body should be directly exposed to radiation;
  - Personal Protective Equipment (PPE), such as leaded aprons, gloves, and goggles, should be worn by workers located in the field of radiation.

  It is important to carefully monitor workers' exposure and equipment maintenance. Clearly mark rooms housing radiation sources, allow only authorized personnel in the area and keep doors closed during use of equipment.

- **Be prepared for emergencies:** these may be workplace accidents, fires, or external catastrophes such as floods, earthquakes, or even war.
  - *Accidents and first aid:* every unit should have a well-stocked and clearly marked first-aid box, including an instruction leaflet, and at least one person present at every shift who knows what to do in emergencies. First aid training should be provided, especially in remote areas where medical aid takes time to arrive. All staff should be oriented on the procedure for obtaining medical assistance in an emergency. The names and location (including telephone numbers) of first-aiders must be displayed on a notice board.
  - *Fire prevention* is a priority: control electrical hazards, lubricate machinery to avoid friction, dispose of oily used rags in airtight containers and make sure that burnable rubbish is cleared away and safely disposed of. Make sure that every floor has clearly marked emergency exits and that these are always unobstructed and unlocked. Provide appropriate fire extinguishers and fire-fighting equipment at strategic places or as determined by law. Assign responsibilities for fire fighting and make sure that all staff are trained to act correctly in case of fire.
  - *Disaster preparedness:* develop a plan before a disaster occurs, and make sure it is known and understood by all staff. Arrange regular practice drills. Emergency procedures should include decisions on how and where the health facility would be evacuated, what disaster recovery steps would be taken to restore some level of services, and how to locate family members and staff who are off duty at the time.

1.2.2. CHEMICAL HAZARDS

- First, **hazardous substances** should be eliminated or replaced with less harmful chemicals or processes (e.g. substitute soap for organic solvents). Second, minimize risk from handling chemicals by:
  - reducing their concentration;
  - pouring them rather than using sprays or aerosols which are harder to control;
  - ensuring that staff wear appropriate protective clothing;
  - reducing the amount of time staff need to spend handling them; and/or
  - ensuring that hazardous products are clearly labelled and stored in lockable cupboards.
- Look out for **latex allergy** and control it through:
  - substituting other materials, for example latex-free and powder-free gloves;
  - reducing time in contact with the latex; and
  - washing and drying hands immediately after use.
- Protection from the effects of **hazardous drugs** when staff are mixing chemical agents can be improved through adequate ventilation, and gloves and gowns should be worn when workers use chemicals or administer certain drugs.
  See Module 3 for more details on Personal Protective Equipment (PPE).
- Exposure to chemical, physical or biological substances or agents at work may affect the **reproductive health** of both women and men. Be aware which agents can affect the fertility of either sex and take control measures. Give additional protection to pregnant women (see Module 7).
- Healthcare waste consists on average of 85 per cent general waste, 10 per cent infectious waste (sharps, contaminated and solid waste) and 5 per cent hazardous-chemical waste (chemicals from laboratories, pharmaceuticals, lead, silver, batteries, mercury, PVC) as well as radioactive waste (WHO, 2013). This is an issue not only for the health facility but for the surrounding community. Module 5 provides more detail on the storage and disposal of all types of waste.

REMINDER

Accessible antidotes

If you use any chemicals that cannot be rinsed or diluted by water in case of accidents, but that instead require special antidotes, make sure you have the antidotes in stock and easily available.

1.2.3. BIOLOGICAL HAZARDS

- The consequences of infection can be severe, and biological hazards (biohazards) are a cause of anxiety to workers as well as patients. The challenge becomes greater, as do staff fears, when a chronic or acute epidemic affects a country, region, or local area.
  - Insist on high standards of hygiene: have a protocol for hand washing, including the provision of sufficient basins, clean water, liquid soap, paper towels; provide adequate toilets (check legal requirements) and shower facilities for staff dealing with highly contagious diseases.
  - Implement standard (universal) precautions.
  - Ensure staff immunization against hepatitis B and influenza.
  - Provide protective personal equipment (PPE).
  - Introduce or strengthen the safe management of sharps.

Because of its importance, this issue is covered in Module 3.

1.2.4. ERGONOMIC OR WORK DESIGN HAZARDS

Musculoskeletal disorders – injuries to muscles, ligaments, joints and bones – are the most common injuries suffered by health workers in almost every part of the world. Preventive action includes changes to work stations and working practices, the avoidance of heavy lifting or use of technical devices to perform such tasks, and reducing prolonged sitting or standing and/or repeated actions.

Because of its importance, this issue is covered in Module 2.

1.2.5. STRESS AND PSYCHOSOCIAL HAZARDS

The health sector is recognized as a high-stress work environment. The evidence from many studies includes higher rates of substance abuse and suicide than in other professions, and elevated rates of depression and anxiety linked to occupational stress (CDC and NIOSH, 2008). Other consequences of job stress include burnout, chronic fatigue, absenteeism, high staff turnover, reduced patient satisfaction, and diagnosis and treatment errors. The factors causing stress include both the intrinsic demands of the job and the way work is organized. Actions to reduce job stress give a high priority to organizational changes that improve working conditions, control the demands of work and give more support to staff.

Modules 4 and 6 cover stress and related issues in more depth.

Checkpoint 1.3

Promote a 'no blame' culture which encourages and supports the reporting of incidents related to health and safety

WHY?

- Quality patient care is most often delivered in facilities where a culture of trust, respect and collaboration exists among staff at all levels and in all departments (see Module 6 for a fuller discussion). A response to accidents or issues that focuses on understanding and solution-finding helps strengthen trust and collaboration.
- A 'no-blame' culture also encourages the reporting that is essential to an improved identification of hazards and towards the implementation of appropriate measures.

HOW?

1. Good communications, encouragement and appreciation, a team approach, and increased autonomy and responsibility are all associated with high morale, commitment, institutional loyalty and good performance. These are the characteristics of a positive practice environment (see Module 6, Checkpoint 6.4.)
2. Avoiding blame means looking at factors that contribute to hazardous incidents rather than blaming the persons involved. It is important to identify and analyse the causes of an incident as a first step towards improving prevention. Reporting should therefore be encouraged by supervisors, reinforced by workplace notices and training, and made as simple as possible.
3. The easiest way to integrate reporting of incidents may be to review the general reporting requirements for different departments and units, and add a question or section as relevant, along the lines of: *"Note here any incident involving faulty equipment or accidental misuse of equipment, and specify whether an injury resulted - especially a needlestick injury – and who was affected".*
4. Staff may find it more difficult to report or disclose symptoms of stress and other psychosocial issues. Supervisors and the staff's medical and personnel services, if any, should be trained to recognize such symptoms and to take the initial steps in providing care and support. At the least, referral information should be available so that workers know where to turn if they're suffering from stress, anxiety, or other pressures.

REMINDERS

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

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

Occupational injury: Any kind of personal injury, disease, or resulting death from an occupational accident.

Reporting: Procedure specified by the employer in accordance with national laws and regulations, and in accordance with the practice of the organization, for the submission by workers to their immediate supervisor, competent person, or any other specified person or body, of information on:

- any occupational accident or injury to health which arises in the course of or in connection with work;
- suspected cases of occupational diseases;
- commuting accidents; and
- dangerous occurrences and incidents.

Recording and notification of occupational accidents and diseases. An ILO code of practice. Geneva, International Labour Office, 1996 (pp. 2–3)

Checkpoint 1.4

Develop a system for workplace safety and the prevention and control of hazards

WHY?

- Injury and sickness have consequences for costs and productivity beyond the specific workplace concerned. In many countries absence rates due to sickness and injury are higher in the health sector than almost all other areas of economic activity (see the relevant box on the first page of this module).
- Developing policies and concrete actions in the workplace helps to reduce injuries and illness and also shows commitment by employers to employees' health and well-being. This results in fitter, healthier staff, and a reduction in staff absenteeism. Money is saved on replacement costs, health care, and insurance. If Occupational Safety and Health (OSH) policies or protocols are already in place, it's worth seeing how they can be improved.
- The benefits of an OSH management system that is integrated with the general management system are widely recognized as providing a coherent framework for action, consistency in implementation, and clear division of responsibilities.

HOW?

1. A good OSH management system brings together the main elements of policy, planning and implementation, evaluation and improvement (ILO 2001 Guidelines on OSH management systems). It has measures in place for equipment, supplies, work processes and work stations.

2. Many workplaces, not only health facilities, have an occupational safety and health committee (if your workplace is too small, you can instead have a designated coordinator). This committee can develop or improve the OSH system and ensure implementation. The HealthWISE team should work closely with the OSH committee or coordinator, in order to enhance communications and consistency. Ideally, an OSH expert would be part of the HealthWise team.

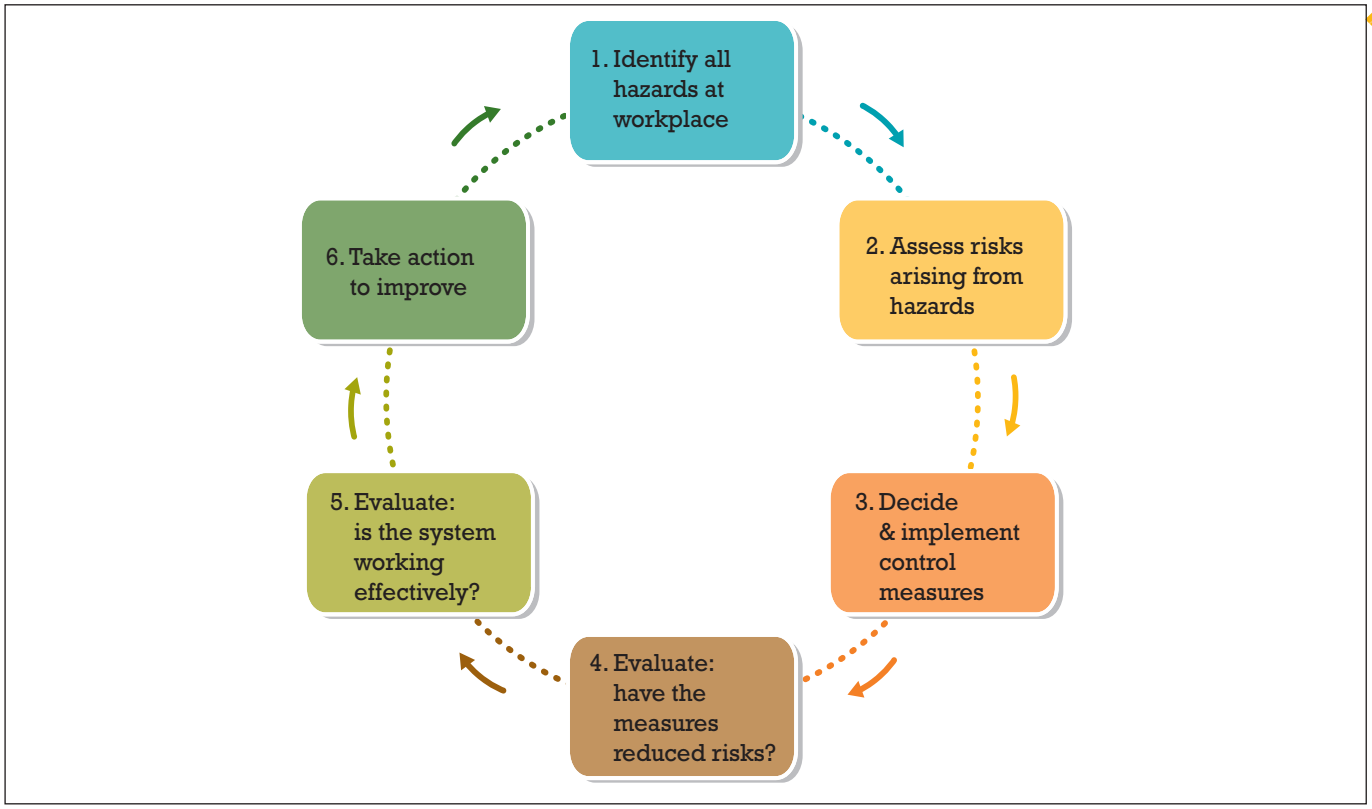
3. A concise and clear policy statement provides the foundation for the health and safety management system. The policy should be developed jointly by management and workers' representatives, and make clear the rights and responsibilities of all parties, and include these in job descriptions. It should also cover patients and visitors as relevant to the context. The policy should be based on national legislation and take into account the establishment's regulations and international guidelines. If a policy already exists, review its effectiveness, ensure it is known and understood, and assess the extent of implementation.

4. International guidelines developed by the ILO and the WHO have helped shape a consistent approach to workplace safety which is proven to be effective in practice and widely applied: hazards need to be first identified then assessed for the degree of risk involved –only then is it possible to put measures in place to control the risk, together with a constant process of monitoring and evaluation (see Checkpoint 1.1 for more detail on identifying and assessing hazards).

5. Ensure that staff has access to occupational health services, either at the facility where they work or in collaboration with other health institutions or occupational health services.

Figure 1.1

Key elements of a system to manage hazards at the workplace and promote safety



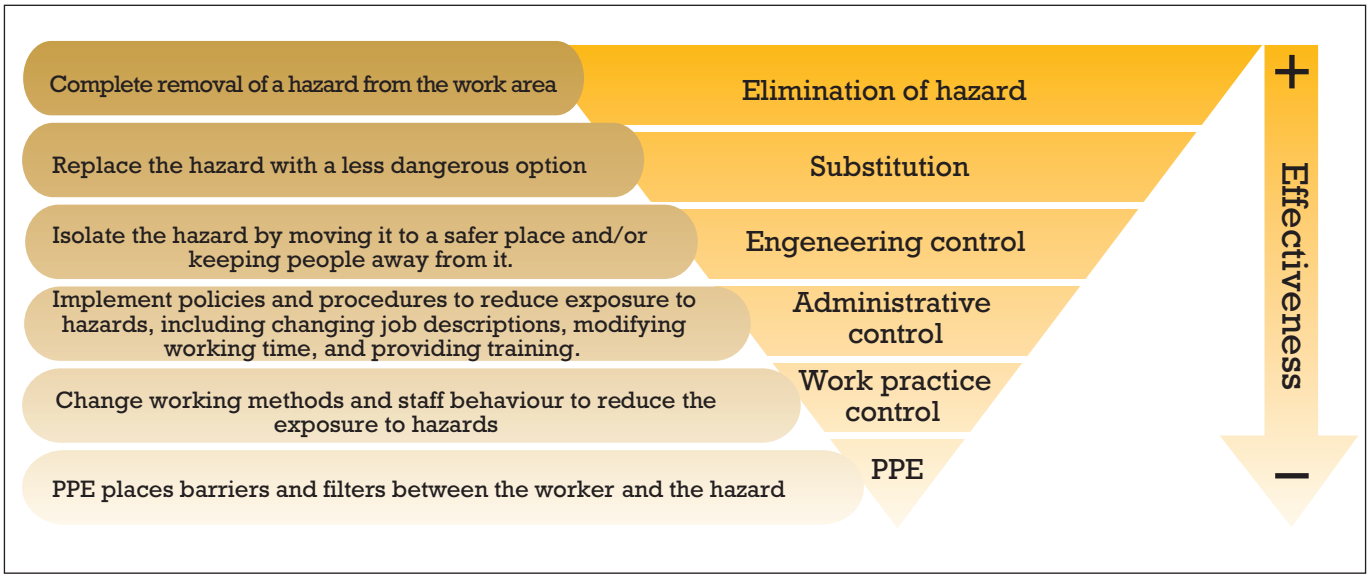
6. The process for controlling risk is also well-established. Hazards and risks should be identified and assessed on an ongoing basis. Preventive and protective measures should be implemented in the following order of priority, known as the hierarchy of controls:

- **Remove or eliminate the hazard** from the workplace entirely –this is the most effective way to control a hazard.
- **Substitute or modify the hazard by** replacing it with a less dangerous option.
- **Use engineering controls** by isolating or moving a hazard to a safer place or keeping people away from it.
- **Use administrative controls** by implementing policies and procedures and providing training to reduce the exposure to hazards.
- **Use work practice controls** by changing working methods and staff behaviour to reduce the exposure to hazards.
- **Introduce Personal Protective Equipment (PPE)** to reduce exposure to a hazard where it cannot be controlled by collective methods. The employer should provide for appropriate Personal Protective Equipment, including clothing, at no cost to staff, and should implement measures to ensure its correct use and maintenance.

7. Your plan will also need to include provisions for first aid and care, including emergency measures such as post-exposure prophylaxis in the event of needlesticks injuries and other exposure to infected body fluids (see Checkpoint 1.2 and Module 3). It should be linked to grievance procedures and conditions for compensation in line with national legislation, regulations, or collective agreements at the organizational level.

8. Health workers should be trained to understand and implement the health and safety policy, including how to identify and handle hazardous substances/equipment and how to recognize symptoms of toxicity. They should also recognize the importance of reporting these to those responsible for staff health, such as an occupational health nurse, clinic or other occupational health service.

Figure 1.2
The hierarchy of controls



REMINDER

Occupational Health Services (OHS) refer to health services at or for the workplace which have an essentially preventive function. OHS are responsible for advising the employer, the workers and their representatives on how to establish and maintain a safe and healthy working environment and work practices that facilitate optimal physical and mental health in relation to work. OHS also provide advice on the adaptation of work to the capabilities of workers in the light of their physical and mental health.

Sources: ILO Occupational Health Services Convention, 1985 (no 161);
Joint ILO/WHO guidelines on health services and HIV/AIDS, 2005.

PROTECTING THE HEALTH OF STAFF

Situation: In 2009 a study of absence due to ill health was carried out at King Khalid University Hospital, Riyadh, Saudi Arabia. This found that a total of 377 (12.1%) employees had 416 spells of sickness absence with 639 sick-off days. Disorders of the musculoskeletal system and upper respiratory tract infections were major occupational hazards among several categories of hospital health workers.

Action: Recognizing the pressures on staff, their potential exposure to risk and high expectations of service, this and other hospitals in Saudi Arabia set up employees' health clinics to provide health care on the premises.

Result: The hospitals were able to provide better care for their staff, improve monitoring of occupational hazards, and revise measures for preventing hazards.

Cost: In this case costs were high because a full clinic was provided, but the idea can be adapted to available resources: in Zambia a nurse visits several health facilities to deal with staff health and in Swaziland 'wellness corners' are available to offer information and support to staff, mainly concerning HIV.

"Medically certified sickness absence among health care workers", Journal of Pakistan Medical Association, September 2012. Available at: http://www.jpma.org.pk/full_article_text.php?article_id=3670

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Module 2:

Musculoskeletal hazards and ergonomic solutions

Module 1 gave an overview of workplace safety and health, this module is specifically devoted to musculoskeletal hazards as these are the ones most likely to affect health workers. According to the Canadian Institute for Work and Health (1999), "[i]n the health care sector, work-related musculoskeletal injuries are the most common and costly occupational health and safety issue." The US National Institute of Health describes disabling back injuries in health workers as "a crisis in healthcare" as "back injur[ies] may be the single largest contributor to the nursing shortage." (Edlich et al., 2005)

See Factsheet 2.2 in the Trainers' Guide for more data on back injuries.

The **2002 World Health Report,** *Reducing Risks, Promoting Healthy Life*, included a section on occupational risks (Chapter 4) which reported on the high rates of lower back pain for certain groups of workers, among them nurses.

(WHO, 2002).

A 2010 survey among hospital nurses in Ibadan, Nigeria, found that the majority (84.4% of 118 respondents) have had work-related musculoskeletal disorders at least once in their occupational lives. Working in the same positions for long periods (55.1%), lizfting or transferring dependent patients (50.8%), and treating an excessive number of patients in one day (44.9%) were the main risk factors. Getting help in handling heavy patients (50.4%), modification of nursing procedures in order to avoid re-injury (45.4%), and modifying patient/nurse positions (40.3%) were the top three coping strategies.

(Tinubu et al., 2010).

The American Nurses Association, in *Nursing World,* reported that nurses use 30 per cent more sick leave due to back pain than the general workforce. Almost 40 per cent of nurses have been affected by back injury, with 68 per cent of disabling injuries the result of over-exertion from lifting patients. Even in the USA, 98 per cent of patient lifting is still done manually.

(Cheung-Larivee, 2011).

Safe patient handling is a priority responsibility for health institutions, and existing ergonomic approaches can be used to improve work processes and work station design.

REMINDER

Musculoskeletal disorders are health problems of the locomotor apparatus, that is the muscles, tendons, skeleton, ligaments, and nerves.
Ergonomics looks at the kind of work people are doing in order to find the best fit between workers and their job conditions.

See the Glossary and Factsheet 2.1 in the Trainers' Guide for a fuller definition.

The objectives of this module are to:

- Raise awareness about the range of ergonomic risks to health workers.
- Highlight the importance of preventing and controlling such risks.
- Provide practical guidance.

Adapting the module to your situation

A number of the measures you can take are not costly – they involve reviewing the way people work, raising awareness about ergonomics, and making possibly minor adjustments to the height of work stations, the repetition of tasks, and the elimination of obstacles. However, one of the most important measures is to avoid heavy lifting by the introduction of aids such as hoists and trolleys. These will require investment, but they are proven to dramatically reduce back injuries and the associated costs, including risks to patients.

Checkpoints for Module 2

2.1	Identify, assess and prevent ergonomic hazards
2.2	Adjust work to reduce heavy lifting, pushing and pulling
2.3	Adjust work to reduce strain, repetitive movements and poor posture
2.4	Raise awareness of staff about ergonomics and help them improve their practice

Checkpoint 2.1

Identify, assess and prevent ergonomic hazards

WHY?

- Musculoskeletal disorders (MSDs), including back injury and carpal tunnel syndrome, are not only the most prevalent and expensive workplace injuries but *also the most preventable*, according to the Occupational Health and Safety Administration of the US Department of Labor.
- MSDs currently account for one-third of all occupational injuries and illnesses in industrialized countries (WHO, undated). In the USA in 2011 they accounted for 33 per cent of all work-related injury and illness, and six occupations accounted for 26 per cent of the cases – these included nursing assistants and registered nurses (US Department of Labor, 2012). These injuries lead to considerable distress for individuals and costs for the health system, which may include disability and the subsequent loss of healthcare workers; risk of injury to patients; and a loss of financial resources for workplaces and insurers. Planning and investing in order to prevent or reduce hazards pays dividends in human and institutional terms.
- Work-related MSDs result from a mismatch between the capacity of workers and the demands of the job. Factors of ergonomic risk vary considerably: they include the physical work environment, the organization of work, and individual capacity and behaviour. Height, age and gender may also influence degrees of vulnerability to injury and illness.

HOW?

Because the causes of MSDs are varied, action needs to be comprehensive, covering job tasks, work spaces, and the knowledge and behaviour of staff.

1. Please look again at Module 1 on workplace safety and health, because ergonomic (work design) hazards are one of the categories of hazard covered. Module 1 stressed the following key elements of systematic action:

- A concise and clear protocol or policy statement to provide the basis for a system to manage health and safety, developed jointly by management and workers' representatives.
- A consistent strategy based on recognized best practice: hazards are first identified, then assessed for the degree of risk involved, and finally measures are put in place to reduce the risk, by removing or controlling the hazard; the process for controlling risk is set out stage by stage.
- Health and safety committees or teams, which are proven to be effective contributors to occupational health programmes at the workplace.

2. Be aware of the factors that can cause musculoskeletal disorders:

- static or awkward postures and movements when positioning patients or equipment;
- quick motions, repetitive movements, and vibration;
- lifting of heavy objects, equipment, or patients – the forward bending often required for patient lifting or moving places the spine in its most vulnerable position;
- poor workplace ergonomics in the design of equipment, chairs, tables, and lighting;
- long shifts without breaks or changes in position;
- cold temperatures; and
- lack of knowledge relating to safe handling and lifting.

Can you identify any of these risk factors at your workplace? If so, first analyse the causes - whether it's a desk at the wrong height, the lack of lifting equipment, or staff practice - and deal with them systematically (see the following checkpoints). Note the units which report fewest MSDs and see what you can learn from them. Take into account factors

such as work organization and the role played by individuals. This process should involve the OSH specialists at your workplace or available through the Ministry of Health; they can give valuable advice, as can the labour inspectorate.

3. Improve the working environment to eliminate or limit musculoskeletal risks and apply ergonomic principles (see Checkpoint 2.4):

- Work in neutral postures, where the body (whether sitting or standing) is aligned and balanced, avoiding excessive twisting or bending
- Reduce excessive force
- Keep everything within easy reach
- Work at proper heights
- Eliminate unnecessary motions
- Minimize fatigue/ static load
- Relieve pressure points
- Provide clearance
- Move, exercise, and stretch
- Maintain a comfortable environment

Specific actions to deal with hazards related to exertion and to repetitive movement are covered in Checkpoints 2.2 and 2.3 respectively.

IMPROVING HEALTH AND SAFETY AND JOB SATISFACTION

Situation: The aim of the action was to reduce absenteeism among cleaners at the Hygiene Institute, Hamburg, and to organize the work in such a way that workers over 50 or 55 could remain in the job.

Evidence: The project started with a risk assessment followed by a survey about personal strains and a medical examination. More than 70 per cent of the cleaners felt the work environment was good and were happy with their supervisors. The specialist assessment identified that one negative aspect of the work was equipment that required unnecessary heavy lifting and/or awkward positions. The medical evaluation found that all the cleaners showed functional problems of the musculoskeletal system and skin irritations.

Action: The employer collaborated with specialists to come up with interventions to reduce the risks. These covered ergonomics and the design and organization of work, including training:

- the equipment was designed to reduce unnecessary strain and awkward positions;
- the equipment was made more adjustable to lighten the load;
- containers for glass or for transporting clothes were redesigned or support devices were installed to aid lifting;
- different 'ergonomic' cleaning equipment was tested and partly introduced;
- a plan for skin protection was developed.

Work organization was amended to alternate work between institutional cleaning and cleaning in the laboratory. The idea was to relieve the monotony of the work. The cleaning staff were given training over four weeks to work in the laboratory.

Results: After six months most of the workers stated that they were very satisfied, and the researchers concluded that the basic precondition for success was the willingness of the parties concerned to adapt to new tasks. A long-term evaluation showed that the institute is still using this system, although it has since been merged with another facility.

(European Agency for Safety and Health at Work, 2009)

Checkpoint 2.2

Adjust work to reduce heavy lifting, pushing and pulling

WHY?

- Back injuries are the most common and often the most debilitating of all musculoskeletal disorders in the health sector. Over-extension (mainly lifting) in nursing and personal care facilities causes the greatest number of back injuries, according to reports from several Occupational Safety and Health Administrations. In the USA, the rates of MSDs among health workers exceed those of workers in other sectors such as construction, mining, and manufacturing. Direct and indirect costs associated with back injuries in health care were estimated at 20 billion USD annually in 2006 (National Institute for Occupational Safety and Health, 2008).
- A two-year study in Denmark among newly-educated female health-care workers without prior history of low-back pain revealed that health workers with high physical work loads were at higher risk for developing low-back pain than those with low physical work loads (Jensen et al., 2012).

HOW?

1. Identify and assess ergonomic hazards related to patient handling.

   Most back injuries are caused by repeated injuries over time, not single incidents. Crowded spaces, non-adjustable equipment, and patients' unpredictable movements further increase this risk. Tasks such as bathing, dressing or feeding patients, making beds and adjusting IV bags require nursing personnel to maintain awkward postures that may cause back muscle fatigue.

2. Review patient handling: this is the cause of at least half of MSDs in health facilities. Observe staff working and consult with them individually. Be sure to involve their representatives in planning how to initiate improvements and evaluating the impact of the actions undertaken.

   The hazards should be managed through the elimination of manual handling where possible, and also through appropriate engineering controls, work practices, hazard communication, and training (see Checkpoint 2.4).
   Note: There is no safe way to manually lift an unsafe load.

   General guidelines to prevent back injuries include:

- Avoid lifting where possible.
- Use mechanical devices for lifting patients and transferring other heavy objects.
- If these are unavailable, make sure that two workers lift the patient or load.
- Increase knowledge and practical skills in patient transfers and handling heavy loads – provide training but also make sure that clear instructions are set out in relevant places, including on how to use lifting aids and their maximum safe working load.
- Keep fit – strong abdominal muscles protect backs.

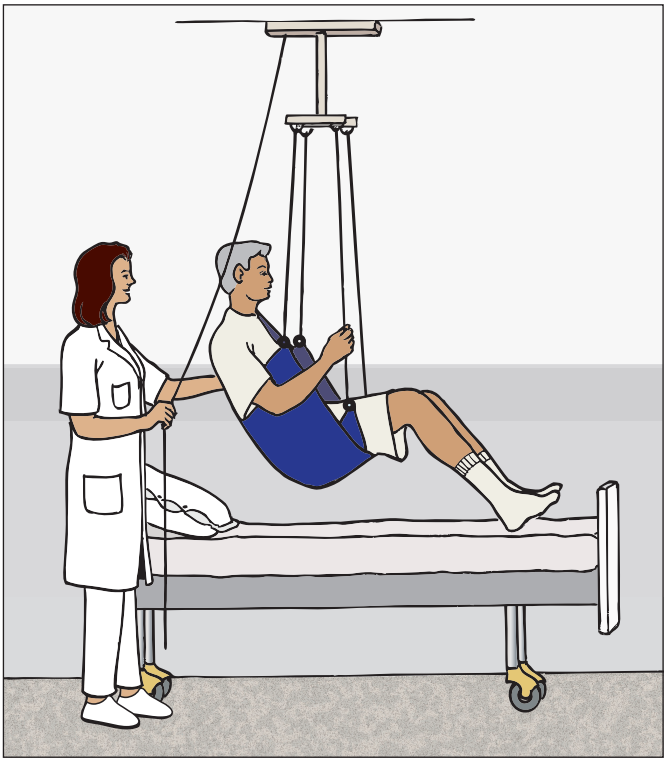
Fewer and more efficient lifting operations. The layout and design of working areas can decrease physical strain when handling patients. For example, for safe transfers enough space is required, together with appropriate handling aids, as well as the ability of the staff to use them correctly. Height-adjustable beds for patients and trolleys with equipment can be used to eliminate unnecessary lifting, carrying, banding or other physical efforts of the staff.

Technical aids include hoists (mobile, fixed, ceiling rail systems, attachable to bed frame), stand-up lifts, adjustable beds, height-adjustable examination and operating tables, patient transfer trolleys, wheelchairs, adjustable toilet and day-care chairs, as well as height-adjustable bathtubs. These aids change the nature of the transfer and reduce the strain on the back. Where hoists are used, it is essential that they should be readily available –if not, staff often choose to do manual lifting or transfer without the hoist because it's quicker.

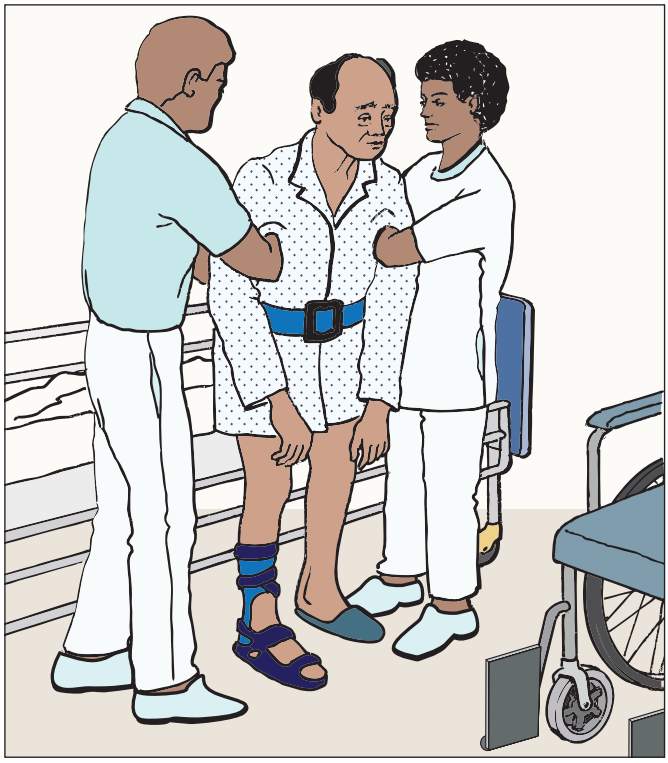
Experts in the USA are advocating implementation of a "Safe Patient Handling – No Manual Lift" policy across the country, with mandated use of mechanical patient lift equipment, in light of a number of studies showing that mechanized patient lifting prevents most back injuries to nursing personnel and reduces pain and injury to patients associated with manual lifting (Edlich et al., 2005).

Small aids offer an excellent cost-benefit ratio and can be very effective. They include sliding mats, sliding boards, rolling boards, anti-slip mats, transfer belts, and special cushions.

Figure 2.1
Safe patient handling



Mechanical hoist



Transfer belt

See Factsheet 2.3 in the Trainers' Guide for a report on preventing patient lift and transfer injuries to health-care workers. This presents the findings of a trial conducted to compare two approaches to reducing musculoskeletal injuries, increasing comfort, and relieving the physical demands on staff at a large acute care hospital in the USA.

Checkpoint 2.3

Adjust work to reduce strain, repetitive movements and poor posture

WHY?

- These risks lead to injuries that are generally less severe than the back injuries described in the checkpoint above, but it doesn't mean they're any less important. If so-called minor risks are left uncontrolled they are likely to become more significant, more debilitating, and more costly and difficult to deal with.

HOW?

As always, prevention is the watchword. Minor physical risks can be prevented or controlled by reorganizing work stations, revising working procedures, adjusting or replacing tools and equipment, and reviewing staff posture and practices.

1. Build flexibility and adaptability into service unit layouts

   Review space allocation, transport arrangements, service delivery routes, and building infrastructure. Take the following steps as necessary:

- Reserve free space in the work area to prevent overcrowding and allow space for extra tasks or increased service delivery.
- Allocate sufficient passageways and make sure they are kept clear (see Module 8) – this is essential for efficient and safe movement of materials and patients, and for preventing falls and contact accidents. Define passageways with clear marking and install protective barriers in dangerous areas. Never allow anyone to put anything on the floor except where it belongs. Different colour lines can also be used as guidance for patients to find different departments. Provide adequate and evenly distributed lighting throughout the service delivery area.

2. Provide enough work space at the patient's bedside

   In the patient care area make sure sufficient space is provided to allow treatment and care action. Inadequate space hinders smooth, efficient work movements. Three main groups of activities influence the space required around the patient's bed or examination table.

- **Clinical treatment and care** (admissions; specific medical and nursing interventions and observation; use of monitoring/diagnostic equipment; use of mobile X-ray machine; informing, discussing, listening to and advising the patient).
- **Personal care and maintenance** (patient able to undress/dress in vicinity of bed with/without assistance, take meals in bed or near the bed, read, write, listen to radio, socialise; staff able to help with washing/bed bathing; use of commode).
- **Support activities** (preparation of clinical procedures, maintaining records, storing personal belongings, keeping day's supply of linen and surgical goods/supplies, temporary storage of patient walkers or other support aids).

3. Improve workstation design

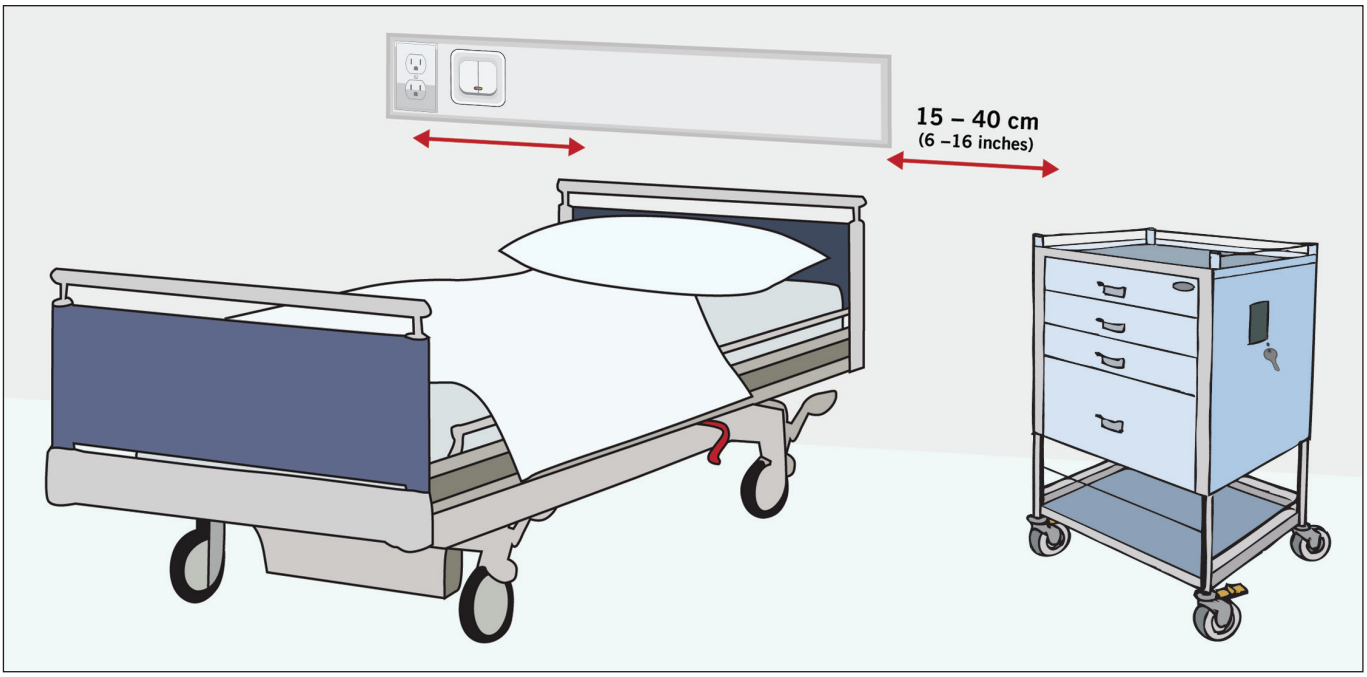
   Examples of work stations in clinical units are the beds, trolleys, operation table or cots in which patients lie; a reception desk; the dressing room; or laboratory. Design the work-station so that staff can work efficiently and without strain. Four rules can help with this:

- Keep materials, equipment and controls within easy reach.
- Improve working position/ posture.
- Optimize visual layout.
- Save time and effort.

Keep materials, equipment and controls within easy reach

Place materials, tools and controls (such as light switches, equipment controls, intravenous flow controls) within easy reach of staff. "The more you use it, the closer it should be" applies to the work-station and to the service unit as a whole. Any object that is frequently picked up or used should be located between 15 and 40 cm (6 and 16 inches) from the side of the patient's bed or the front of the work surface. Bear in mind that workers may be right- or left-handed so materials and equipment should be within their reach in either case.

Figure 2.2
Appropriate workspace and reach distance for workers at the bedside



Improve working position/ posture

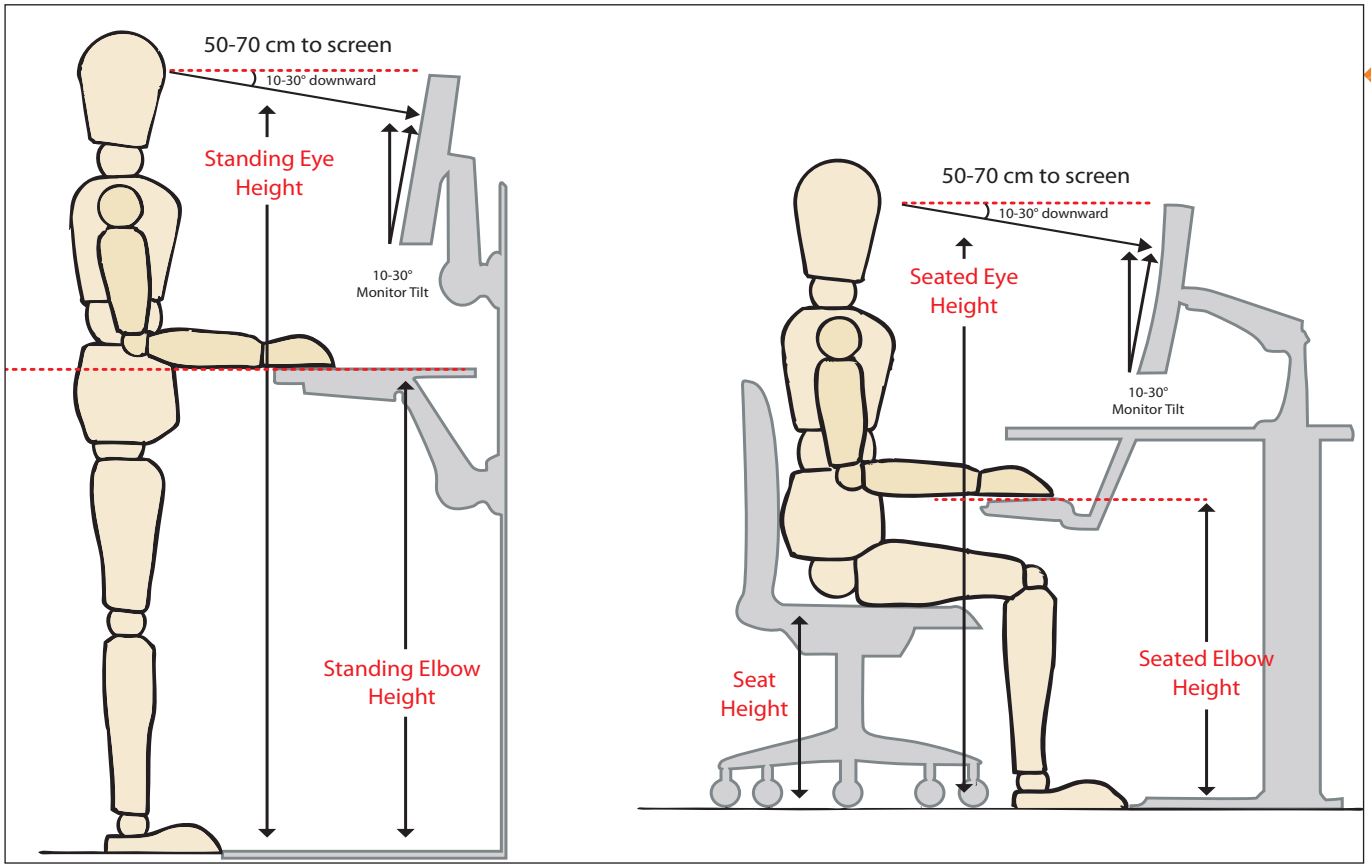
Working in a difficult 'non-neutral' position often means the task takes longer and quickly leads to fatigue. For example, activities with the arms raised, such as hooking intravenous fluid containers on an infusion stand, tire the shoulder muscles rapidly. Activities while bending forward or twisting the body such as turning an adult patient or reaching backward to access something while holding on to a patient, can easily cause back strain (see Checkpoint 2.2).

The following measures help avoid difficult working positions:

- provide a stable level work surface where work items or equipment can be firmly placed;
- use stable platforms or step ladders to reach objects on higher levels;
- use height-adjustable equipment such as patient beds;
- provide chairs of correct seat height (or height adjustable) with a sturdy backrest for persons working at a desk or similar;
- provide enough leg space to allow easy leg movement;
- provide enough head space so that taller workers, patients or visitors don't risk knocking their heads.

The height of the work surface where care is performed is important. The *elbow rule* should be applied to determine the correct hand height. Most work activities are best performed around elbow level. Seated work such as in laboratories is an exception: objects can be raised slightly above elbow level to allow the worker to see the fine detail.

Figure 2.3
Recommended dimension for standing and seated tasks



Optimize visual layout

Ensure that staff can clearly see and identify their work materials. Patient beds and work benches should be high enough for staff to work on, and to keep everything within easy sight. Monitor displays should be placed at an appropriate distance (about 50 – 70 cm or 20 – 28 inches from the worker's eye) and within natural line of sight (10 – 30° downward from the eye level).

Avoid repetitive movements

Save time and effort by avoiding frequent repetitive motions as they can be very tiring and cause strain injuries, especially when continued repeatedly over a long period. Make it easy for staff doing repetitive work to change tasks, vary the way they carry out tasks (e.g. shift computer mouse to the other hand from time to time) and take breaks.

Checkpoint 2.4

Raise awareness of staff about ergonomics and help them improve their practice

WHY?

Ergonomics is not just about engineering controls, mechanical aids and work design: it also puts an emphasis on staff behaviour, posture and practice. Staff who understand the basic principles of ergonomics and who are trained in relevant working and handling techniques can take important steps to protect their own health.

This does not mean transferring responsibility to staff but sharing it appropriately. For example, the comparative study in the USA cited under Checkpoint 2.2 showed training resulted in measurable improvements in worker fatigue reduction and well-being. The study found even greater improvements when training was associated with the provision of mechanical lifting aids.

See Factsheet 2.3 in the Trainers' Guide for more details.

HOW?

1. **Hazard communication** is a necessary measure to raise and maintain staff awareness. This means providing information at strategic points as reminders of risk and correct procedures. Labels indicating 'hazard alert' or a similar phrase, should not only be linked to poisonous chemicals or selected medication but to areas where staff may have to handle heavy loads or make repetitive movements of the hand or arm.

2. **Specialized training** should also be provided to staff who carry out tasks associated with high levels of MSDs, for example training in back care, patient assessment, and appropriate handling techniques.

- Put in place a training plan that covers both new staff and existing staff who need to be re-trained, especially when new procedures or equipment are introduced.
- Use different types of training, formal and informal, including mentoring.
- Support training by making sure that equipment is placed together with the necessary instructions on safe and efficient handling. Use notice boards and appropriate wall spaces for useful information and reminders.

See Factsheet 2.4 in the Trainers' Guide for ten basic ergonomic principles.

REMINDERS

Risk control

Although this is the primary responsibility of management, it is helpful if all staff are trained to:

- identify the tasks involving manual handling;
- analyse the tasks that cause particular concern in terms of handling;
- find solutions to reduce the risk related to manual handling;
- evaluate the impact of the actions undertaken and decide how preventive actions should be further improved.

Preventing back injury

You can protect your back by following some simple safety principles and by using common sense:

- maintain neutral body posture: neck straight, shoulders relaxed, elbows at sides, wrists straight;
- maintain the natural 'S' curve of the spine (for example, use a small cushion at the lower back if sitting);
- use safe body mechanics;
- use protective lifting devices;
- act safely when lifting and transferring patients;
- keep physically fit.

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Module 3:

Biological hazards and infection control, with special reference to HIV and TB

This module focuses on biological hazards to which health workers are exposed during the course of their work. Biological hazards (biohazards) exist in all health-care settings and include airborne and blood-borne pathogens. For example, the agents from air that cause tuberculosis or severe acute respiratory syndrome (SARS); or those from blood which causes hepatitis or HIV infections (Wilburn; Eijkemans, 2004).

In developing countries, 40–65 per cent of HBV and HCV (hepatitis B and C) infections in health-care workers were attributable to percutaneous occupational exposure. In industrialized countries, it is 8–27 per cent for HCV, around 10 per cent for HBV due to immunization and post-exposure prophylaxis (PEP), and 0.5–11 per cent for HIV (Prüss-Ustun; Rapiti; Hutin, 2003).

This module examines biological risk and infection control, emphasizing the importance of standard precautions with a particular focus on HIV and TB. A risk-management strategy to prevent workplace exposure and protect health workers from biological hazards will also protect patients. Prevention and control measures, be they vaccinations for hepatitis, or antiretroviral treatment for HIV, should cover all health workers so that they can better protect the health of the public at large.

The **objectives** of Module 3 are to:

- Identify what are biohazards and the risks of transmission.
- Highlight the importance of effective measures for infection control.
- Provide practical guidance on the effective prevention and management of biohazards.

Adapting the module to your situation

Infection control standards should not be compromised, although we recognize that some institutions have limited resources. Even if the full range of equipment described in this module is not available, information and education should be provided for infection control, and the basic rules of hygiene and standard precautions followed.

Checkpoints for Module 3

3.1	Identify and assess biohazards at your workplace
3.2	Implement measures to prevent and control blood-borne hazards such as HIV and hepatitis
3.3	Implement measures to prevent and control airborne hazards such as TB
3.4	Implement a comprehensive workplace HIV and TB prevention and care programme

Checkpoint 3.1

Identify and assess biological hazards at your workplace

WHY?

- Biohazards are present in hospitals and clinics, and health workers face a wide range of infectious hazards on a daily basis. Health workers' sickness is costly for the health system, the individual health worker, and also affects patient care.
- A clear understanding of the nature of hazards, their transmission routes, the scale of risks faced by staff and patients, combined with commitment by both staff and management to prevent these hazards, will help staff to feel safe at work.

WHAT?

The biological hazards can be the presence of infectious agents or used sharp instruments. Pathogens can enter the human body through a puncture, abrasion, or cut in the skin, through mucous membranes, or by inhalation or ingestion.

Studies found that the risk of infection following occupational exposure to Hepatitis B is 18–30 per cent (Prüss-Ustun et al., 2003); Hepatitis C 1.8 per cent (Puro et al., 2010); and HIV 0.3 per cent (Cardo et al., 1997; WHO–ILO, 2007).

Table 3.1 Some examples of potential infections caused by exposure to biological hazards

Type of infection	Causative biologic agents	Transmission route
Gastro enteric infections	Enter bacteria (salmonella, shigella, vibrio cholera, clostridium difficile, helminths)	Faeces, vomit
Respiratory infections	Mycobacterium tuberculosis, measles virus, streptococcus pneumonia, corona virus	Inhaled secretions, saliva, airborne droplets
Ocular infection	Herpes virus	Eye secretions
Skin infections	Streptococcus spp. Bacillus anthraces	Pus Skin secretions
Meningitis	Neisseria meningitides	Cerebrospinal fluid
HIV	Human immunodeficiency virus	Blood, body fluids
Haemorrhagic fever	Ebola and Marburg viruses	All blood products and secretions
Bacteraemia	Staphylococcus, enterobacter, enterococcus, klebsiella, streptococcus	Nasal secretion, skin contact
Candide Mia	Candida Albin ca	Blood
Viral Hepatitis A	Hepatitis A virus	Faeces
Viral Hepatitis B and C	Hepatitis B and C viruses	Blood and body fluids
Avian influenza	H5N1 virus	Blood, faeces

WHO, 2013.

WHO IS AT RISK?

All individuals coming into close contact with biologically hazardous agents present in health-care facilities are potentially at risk; they include:

- medical doctors, nurses, laboratory technicians, aides/orderlies and porters;
- workers in support services, such as cleaners, waste handlers, cooks, laundry workers, and maintenance workers;
- patients and visitors.

HOW?

The first step is to identify and assess the hazards. Once hazards have been identified, action must be taken as soon as possible to eliminate or contain the hazards. Please also refer to the general approach recommended in Module 1 for all hazards.

Standard preventive actions

This includes provisions for personal protective equipment (PPE) and emergency measures such as post-exposure prophylaxis (PEP) in the event of needle stick injuries or exposure to other infected body fluids (see Checkpoint 3.2).

Regular monitoring of the implementation of infection prevention practices and their effectiveness is important:

- Provide infection control training and keep records of attendance.
- Report and record incidents of exposure to biohazards and note actions taken including the time laps for actions.
- Communicate information on infectious hazards, new outbreaks, and actions that health workers should take as soon as the incidents are identified.
- Provide training when new biological hazards are identified that different staff may be exposed to, as well on products or procedures implemented that may cause injury.

A biohazards prevention policy

You may wish to have a specific policy for biohazards or strengthen your existing OSH policy on biohazards. It could be a short policy statement, a protocol, a regulation, or a more detailed document.

When determining appropriate protective measures, it is necessary to have a clear understanding of how each pathogen can enter the body (see above). As with other hazards, the knowledge and experience of the staff are critical in identifying biological hazards and assessing the need for action; **Factsheet 3.1** at the end of this module gives an overview of biohazards. You may wish to focus on those which occur most frequently in your health facility and which can have the most serious consequences. Evaluate how *likely* it is that the risk will occur and how *severe* in terms of the effects of the hazard (see **Workplace Hazard Assessment Form** in Checkpoint 1.2, Module 1).

Checkpoint 3.2

Implement measures to control blood-borne hazards including HIV and Hepatitis

WHY?

- Good preventive measures to guard against biological hazards in health-care settings and dealing with transmission routes could save lives and other costs.
- There is particular concern about infection from the human immunodeficiency virus (HIV) and hepatitis viruses B and C for health workers. Evidence is strong on transmission from contaminated human blood through needle stick injuries, as this occurs from accidents in handling sharps or through the unsafe disposal of sharps. Sharps represent a double risk: they may not only cause physical injury but also infect through these wounds if the sharps are contaminated with pathogens. Although theoretically any needle-stick injury can lead to the transmission of blood-borne infections, hollow needles are associated with a higher risk of transmission than solid needles, such as suture needles (Puro, Petrosillo, Ippolito, 1995; Trim, Elliott, 2003; Ganczak, Milona, Szych, 2006). The principal concern is that infection may be transmitted by subcutaneous introduction of the causative agent (e.g. HIV or Hepatitis C).

WHAT?

All blood and other body fluids should be treated as potentially infectious and handled accordingly. This is the principle which underlies the application of standard precautions (see box).

In Canada, Italy, Spain, and the United States of America, where there are good facilities for health services, exposures still account for 66–95 per cent of all occupational exposures to blood-borne pathogens and, of these, needle-stick injuries accounted for 62–91 per cent (Puro et al., 1995; Trim and Elliott, 2003; Ganczak, et al., 2006).

WHO IS AT RISK?

It is not only medical staff who are at risk, but also cleaners, laboratory workers and kitchen staff. For example, the assistants and cleaning staff who remove the waste from patient care or treatment units are equally at risk as they may be exposed to injuries due to contaminated broken glass or sharp objects that end up in the general waste container. These workers are often without protective clothing, gloves or suitable safety equipment to handle their work (see the waste management module).

Table 3.2 Frequency of procedure that health-care workers were using at the moment of percutaneous injury in selected countries and areas (%)

Country	Recapping needles	Stuck by colleague	Disassembling device	During disposal	Unattended needle	Movement of patient
New Zealand	15	NR	NR	21	NR	NR
Nigeria	18	18	10	NR	NR	29
South Africa	17.4	7.2	3	9.6	4.8	23.4
Taiwan, China	32.1	3.1	2.6	6.1	NR	NR
USA	12	NR	NR	13	8	NR

Prüss-Ustun; Rapiti; Hutin, 2003.

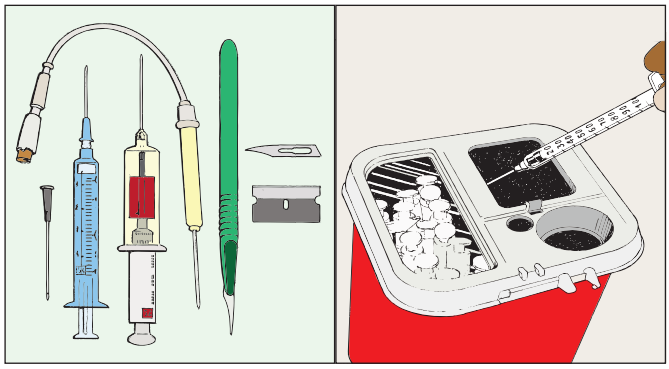


Figure 3.1
Sharp items and a sharp items disposal container

Factsheet 3.2 provides some examples of assessments of HIV or Hepatitis B and C risks

HOW?

The following points should be part of the facility's regular occupational safety and health (OSH) assessment and recorded in official documentation:

- Check to ensure that there are puncture-resistant sharps boxes at the site where sharp items are being used (e.g. at the bedside or on a trolley).
- Make sure that all occupational exposures are recorded, noting the time of the incident, circumstances of the incident, and the length of time taken to follow up with PEP when needed.
- Record the Hepatitis B immunization coverage of staff. Record the proportion of health workers, including waste handlers and cleaners, having received all three doses of the Hepatitis B vaccine. Check to verify the documentation of vaccinations.
- Check that work surfaces are cleaned and disinfected regularly, and spills are cleaned immediately.
- Verify that standard (universal) precautions are implemented.
- Ensure that there is a system for the safe management of sharps and other wastes, and that it is being implemented.

Post-exposure prophylaxis (PEP) should be applied where appropriate, as it can reduce the risk of HIV transmission by 80 per cent. All health workers should be given Hepatitis B vaccinations which can prevent up to 95 per cent of Hepatitis B infections (WHO, 2003). Refer to **Factsheet 3.3**, First-aid on exposure to blood borne pathogens, and **Factsheet 3.4**, WHO Aide-mémoire on Hepatitis B vaccination.

Table 3.3 Example of items for spillage cleaning

Action	Items or tools to use
Approaching the spillage	Use protective equipment to secure the area
Containing the spillage	Use absorbent material (towels, gauze pads)
Disinfecting the spillage, if necessary	Disinfectant
Collecting the spillage	For liquids: absorbent paper, gauze pads, wood shavings For solids: forceps, brooms, dustpans or shovels
Organizing containment for disposal	Plastic bag (colour coding as appropriate); sharps container
Decontaminating or disinfecting the area	Use disinfectants for infectious material
Documenting the spillage	Report the incidence to management

WHO, 2004.

Dealing with spillages

A contaminated spillage area should be cleaned immediately. If the spilled material is highly infectious, identify the infectious agents and determine whether immediate evacuation is warranted. Hazardous spillage is more likely to occur in laboratories than in medical care areas.

Apply the **hierarchy of controls** to prevent needle stick and other sharps injuries (**Factsheet 3.5**)

- ***Eliminate hazard*** via the complete removal of the hazard from the work area:
  - use needleless intravenous (IV) systems and devices;
  - use jet injectors instead of syringes and needles;
  - eliminate unnecessary injections, administer medication through another route.
- ***Apply engineering controls,*** isolate or remove the hazard:
  - introduce single-use devices, needles that retract sheathe or blunt immediately after use;
  - provide safe sharp disposal containers that are puncture resistant –place them at eye-level and within arm's reach.
- ***Use administrative controls***, policies and guidelines to limit exposure to hazards:
  - allocate resources for safe devices and disposal containers;
  - replace unsafe devices;
  - establish protocols for exposure control, the application of standard precautions, the safe handling and disposal of sharp devices;
  - provide consistent training on safe use of sharp devices;
  - encourage reporting of all incidents;
  - monitor effectiveness of infection control and sharps management;
  - set up an infection control/needle stick injury prevention committee, if necessary.
- ***Provide personal protective equipment***, barriers and filters between the worker and the hazard; for example, gloves, gowns, eye goggles or face shields (see **Factsheet 3.8**).

REMINDER

PREVENTING EXPOSURE TO BIOLOGICAL HAZARDS

Use standard or universal precautions, which are simple standard infection control practices in caring for all patients, at all times, to minimize the risk of exposure to blood-borne pathogens. The principle is to apply precautions universally and to all persons, whatever their presumed infectious status because it is impossible to know all who is and who isn't infected at all times.

1. Hand-washing before and after a procedure.
2. Use of protective barriers (gloves, gowns, masks) for direct contact with blood and other body fluids and use of bandages or dressings to cover broken skin.
3. Disinfection of instruments and other contaminated equipment following the required time, temperature, methods and procedures.
4. Careful handling and disposal of sharps (needles or other sharp objects)
5. Safe disposal of waste contaminated with body fluids or blood.
6. Proper disinfection of instruments and other contaminated equipment.
7. Minimal handling of soiled linens and use of gloves and leak-proof bags.
8. Provision of prevention of blood borne pathogen training and adherence to recommended infection prevention practices, including providing/taking up the full series of Hepatitis B vaccinations.

*Refer to the **WHO Aide-mémoire** on standard precautions (**Factsheets 3.6, 3.7**) and **Factsheet 3.10** on hand hygiene.*

REMINDER

Preventing and responding to sharps injuries

1. Eliminate unnecessary injections.
2. Eliminate sharps from IV injection bags.
3. Avoid recapping of needles.
4. Never hand used sharps from one person to another, instead use the neutral zone to pass instruments.
5. Plan for safe handling and disposal before beginning any procedure using needles.
6. Promptly dispose of sharps in puncture-resistant and liquid-proof containers that are closed, and can be sealed and destroyed when they are 2/3 full. Do not wait until they are full.
7. Report any needle stick and other sharps-related injuries promptly so that the person concerned can receive appropriate and timely follow-up care as needed.
8. Conduct post-exposure evaluation, counseling, and follow-up including prophylaxis within 2 hours of exposure.
9. Inform management of any hazards from needles or sharps resulting in injuries or 'near-misses'.
10. Help the management to evaluate and select devices with safety features.
11. Help establish procedures for evaluating the circumstances surrounding an exposure incident and devise preventive measures for the future.
12. Set up compensation mechanisms for work-related injury and illness.

Waste management

Of wastes generated from health-care activities, 20 per cent are considered hazardous materials that may be infectious, toxic, or radioactive. Infectious wastes are those "suspected to contain pathogens (bacteria, viruses, parasites, or fungi) in sufficient concentration or quantity to cause disease in susceptible hosts." See Module 5 for more detailed guidance on waste management.

CASE EXAMPLE: Safe sharps disposal

Situation: A hospital in Venezuela was due for an inspection on needle stick safety in the workplace.

Action: They made a rapid internal assessment, which identified a lack of boxes for disposing sharps. Thick plastic containers for dialysis liquid were usually discarded as garbage in the hospital. They decided to use these emptied containers as sharps disposal containers.

Result: After two days, sharp disposal containers in the form of thick plastic boxes were attached to walls, trolleys, and other surfaces for the nurses. These containers were placed close at hand where sharps were used. The staff continued this practice after the inspection until the containers were replaced with proper sharps disposal boxes.

Cost and sustainability: The implementation of this solution did not incur additional cost because the containers would normally have been discarded after use. Now they were instead collected for use as puncture-proof and liquid-proof containers for the safe disposal of needles.

Personal communication from Maria Sofia Lioce, National Institute for Occupational Safety and Health (NIOSH), US Centers for Disease Control and Prevention, 2011.

Checkpoint 3.3

Implement measures to control airborne hazards including TB

WHY?

- Precautions against airborne infection transmission are necessary because microorganisms, such as the *Mycobacterium tuberculosis* that causes TB, are transmitted by airborne droplets. These particles remain suspended in the air and can be widely dispersed by air currents within a room or over a long distance.
- The emergence of new infections, such as SARS (Severe Acute Respiratory Syndrome) and Middle Eastern Respiratory Syndrome-Coronavirus (MERS-CoV), both of which are caused by different sub-types of coronavirus, can pose risks to health workers exposed to the pathogens while attending to patients (Public Health Agency of Canada, 2013). An increasing number of previously unknown diseases are emerging today whose causative agents and modes of transmissions are only identified at a later time. In the case of Coronavirus which caused SARS, up to 25 per cent, 22 per cent, and 18 per cent of reported SARS cases in Canada, the Hong Kong Special Administrative Zone, and China were health-care workers who acquired the disease from exposure to infected patients without using respiratory protective equipment.

WHAT?

One of the key routes of biohazards transmission is through air. WHO estimates put health workers at eight times higher risk of acquiring TB than the general population (WHO, 2006). TB, particularly multi-drug resistant (MDR), and extensively drug-resistant (XDR) strains are harder to diagnose. This situation makes the protection of health workers particularly challenging.

Factors contributing to TB outbreaks include the following:

- Weak TB control programme and lack of implementation of infection control measures.
- Inappropriate use of antibiotics resulting in antibiotic-resistant strains.
- Inadequate public health infrastructures.
- Impact of the HIV epidemic.
- Rapid population growth.
- Poverty and malnutrition.
- Crowded housing, poor ventilation.

Factors to consider in assessing health workers' risk of exposure to TB are the following:

- The number of infectious disease patients seen per year in the facility.
- The amount of time a health worker is in contact with infected patients.
- The HIV status of the health workers. Those with HIV are at highest risk for contracting TB and should be relocated to work areas with low pathogen exposures.
- The level of high-risk procedures undertaken by a health worker (e.g. sputum collection, bronchoscopy).

HOW?

ASSESSMENT CHECKLIST

☑ Do patients and staff cover their nose and mouth when sneezing or coughing?

Always ☐ Sometimes ☐ Never ☐

☑ Is a ventilation system in place?

Natural ☐ Mechanical ☐ None ☐

☑ Are upper room or shielded ultraviolet germicidal irradiation (UVGI) devices in place?

Yes ☐ No ☐

☑ Are respirators used (N95/FFP3 or other), particularly for high-risk cough-inducing procedures?

Yes, Always ☐ Yes, Sometimes ☐ No, Never ☐

If yes, specify the type being used:

_____

WHO, 2007.

Once specific biohazards have been identified, establish specific measures to prevent and control them. Apply the hierarchy of controls.

Administrative controls

Administrative controls are the first priority in helping to reduce airborne infection transmission in health-care facilities.

- Control the spread of pathogens, by using cough etiquette: ask everyone to cover their mouth when coughing, dispose of sputum safely, wash hands, and apply respiratory hygiene.
- Reduce the time a person stays in a health facility and treat promptly those infected.
- Identify promptly and early people with TB symptoms, quarantinee infectious patients.

  Note: *The diagnosis of MDR/XDR-TB takes time so pre-emptive action should be taken to segregate potential cases to prevent the spread of the infection.*
- Train health workers on TB signs, symptoms, prevention, treatment, and infection control.
- Provide a prevention and care package for health workers, including HIV prevention, free TB and HIV diagnostic testing and counselling, antiretroviral therapy and isoniazid preventive therapy (IPT) for HIV-positive health workers (see Checkpoint 3.4).

Environmental controls

Environmental controls are the use of engineering technologies to help prevent the concentration and spread of infectious droplets in the air. This control is to be used in combinations with administrative controls and work practices.

- Monitor daily natural ventilation (open windows), maximize the size of window openings and locate windows on opposite walls to create air flows.
- Control the direction of infectious air.
- Use mechanical ventilation systems.
- Use ultraviolet germicidal irradiation (UVGI) fixtures, when adequate ventilation cannot be achieved.

Cough etiquette and respiratory hygiene

Health-care facilities should ensure the availability of materials for adhering to cough etiquette in waiting areas, treatment rooms for patients, and areas for visitors and staff.

- Provide tissues and non-touch waste containers to dispose of used tissues.
- Provide surgical masks to TB-suspected patients and visitors.
- Promote cough etiquette and hand washing by using posters in high-traffic and high exposure risk areas.
- Provide respirators for staff.
- Provide dispensers of alcohol-based hand-rub and/or antiseptic wipes.
- Provide clean water, soap, and disposable towels for hand washing.

To minimize the spread of infectious droplets, such as TB, patients and visitors need to be educated in cough-hygiene. This is particularly critical for coughing patients or persons with suspected signs and symptoms of TB. The cough etiquette and respiratory hygiene include covering one's nose and mouth when coughing or sneezing. The health facilities should provide surgical masks or tissues for use.

- Cover the mouth and nose when coughing, speaking, or sneezing.
- Avoid coughing directly into hands and use a tissue.
- Dispose of the tissues in the nearest waste container immediately after use.
- Wash hands with soap and water and antiseptic hand-rub after contact with respiratory secretions and contaiminated objects/materials.

Cough etiquette reduces transmission of larger air droplets, hence contributing to control of other respiratory infections. If these physical barriers are not available, the mouth and nose should be covered with the individual's bend of the elbow or hands, which must then be cleaned immediately. There should be strong behaviour-change campaigns for this practice in health-care settings.

The aim of ventilation should be directed to move the source of potential contamination to air-exhaust points or areas where there can be sufficient dilution. For example, the ventilation should move infectious air away from patients and health workers, replacing infected air with fresh outside air.

The choice of ventilation for environmental controls (natural, mixed –such as fans, or other mechanical means) depends on local conditions, such as building design, construction, renovation, and use. These conditions in turn need to be tailored to local climate, regulations, culture, socioeconomic conditions and outdoor air quality.

The threshold for ventilation requirements will vary according to the type of ventilation (e.g. recirculated air versus fresh air). There are two ways to measure the ventilation rate:

1. Consider the volume of the space (i.e. air changes per hour or ACH);

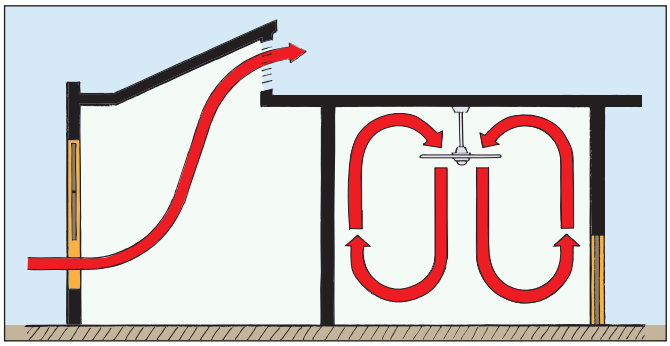
2. Consider the number of people in a space (i.e. litres/second/person).

Occupancy-based measurement of ventilation rates takes into account the fact that each person in a space should have a certain supply of fresh air. A ventilation rate of at least 12 ACH (80 litre/second/patient for a room size of 24m3) is recommended to dilute airborne pathogens.

Improving ventilation

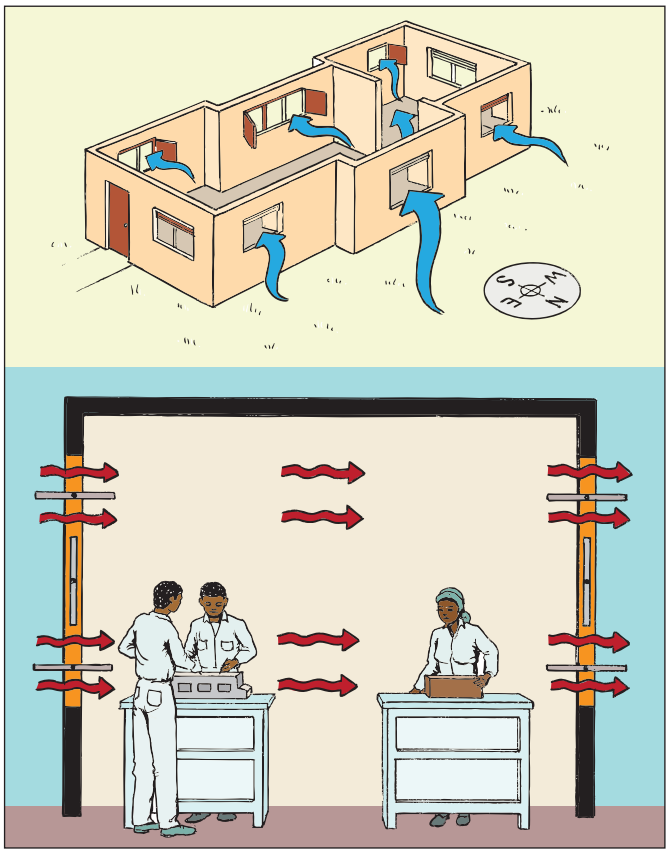
Dust and microorganisms in health care delivery areas should be eliminated by frequent airing. The smaller the room, the greater the air-flow required to keep it clean. All working premises have some natural air ventilation, but in hot climates fresh air supply might not be sufficient. Ventilation is not to be confused with air circulation inside a building; ventilation replaces contaminated air with fresh air; whereas air circulation ensures thermal comfort by moving the air without exchanging it with fresh air.

Figure 3.2
Use natural air flow for ventilation, especially horizontal air-flow



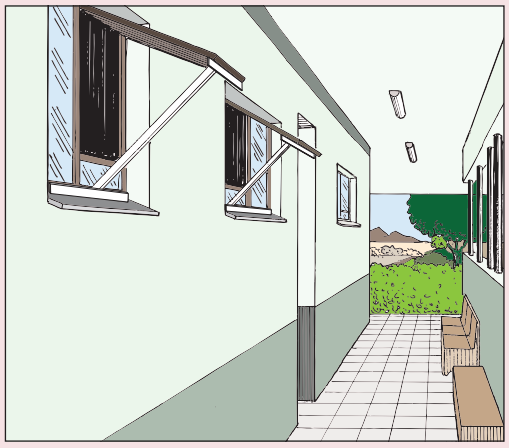
Ventilation Air circulation

Figure 3.3
Create natural air flow for ventilation by having openings on opposite sides of rooms



Do not spend substantial resources on installing mechanical ventilation systems; open windows can provide cross-ventilation and dilute and remove droplets containing microorganisms. Multi-section windows help regulate airflow according to wind conditions, and in many cases low-cost measures can achieve results as good as or even better than expensive ventilation systems –see the example from Swaziland.

CASE EXAMPLE: Improving ventilation



Situation: A Swaziland hospital had poor ventilation in a TB ward. The windows could be opened slightly with hooks, but this was insufficient for proper ventilation.
Action: TB experts at the hospital suggested building H-shaped wooden devices to insert between the window and the window frame so that the window could be opened wider and held open.
Result: Ventilation improved. The risk of cross infection among patients and staff was reduced.
Cost and sustainability: It is a low cost and sustainable solution as the H-shaped devices can be made easily and last a long time.

Personal communication from Dr Bongiwe Radebe, Royal Swaziland Sugar Corporation, Swaziland, July 2010.

Figure 3.4
Use of fan to blow contaminated air outside

Use fans properly

Fans may be used to remove hazardous substances. Contaminated air can be pushed or blown outside through an opening; the air speed should be low to reduce turbulence and the expelled air from the workplace should not affect people outside.

Use of ultraviolet germicidal irradiation (UVGI) fixtures

Priority should be given to achieving sufficient air changes per hour using natural or mechanical ventilation systems. However, in some settings this might not be possible due to outdoor temperature (cold weather), building structure, or highly morbid conditions (MDR-TB wards). In these cases, UVGI can be considered although it should only complement but not replace a ventilation system. It can be hazardous if not properly designed, installed, operated, and maintained. Workers may also suffer inadvertent eye exposure if they climb into the high-UV zone for tasks such as painting, cleaning, and maintenance (ICN, 2009). UVGI should be installed where there is a high ceiling so workers will not be staring into the lamp, and fans or other forms of ventilation should be in place to mix the disinfected upper room air with the potentially contaminated air below.

Personal Protective Equipment (PPE)

Personal protective equipment is essential if hazards cannot be removed or eliminated. See **Factsheet 3.9** on personal protective equipment for airborne hazards protection.

Common protective equipment:

1. ***Surgical masks*** generally consist of three layers of non-woven fabrics; they provide barrier protection against large respiratory droplets.

   Use a disposable mask, but remember that protection is reduced if the mask is not worn correctly –it should cover the nose, mouth, and chin. Make sure the strings or elastic bands are positioned properly so that the mask fits snugly and remains firmly in place. A surgical mask can generally be used for several hours but no more than a day. When the mask is damp, damaged or soiled, replace it. If the surface of the mask is touched or the wearer has a cough, the mask should be changed more often. After use, the mask should

be put in a bag or wrapped with paper before disposal and hands should be washed thoroughly.

2. N95, FFP2, FFP3 or higher level *respirators*, which filter out particulates and liquid droplets in small particle sizes, provide protection from inhaling aerosol emissions and micro-organisms. It is essential to fit-test a respirator in order for it to function properly. This is not the same thing as the user seal check.

Health workers should always use specific respirators in the following situations:

- During aerosol-generating procedures associated with high risk of airborne pathogens, such as TB, transmission (e.g. bronchoscopy, intubation, sputum induction procedures, aspiration of respiratory secretions, autopsies or lung surgeries with high speed devices).
- When providing care to infectious MDR-TB and XDR-TB patients or people suspected of having infectious MDR-TB and XDR-TB.

Droplet precautions should be taken with patients known or suspected to be infected with microorganisms transmitted by large particle droplets (influenza, mumps, measles, and rubella) which can be generated through coughing, sneezing, talking, or respiratory therapy. These precautions include wearing a mask when working within one metre from the patient and keeping patient movement to a minimum. Where possible the patient should be treated in a private room.

Staff and patients must all receive appropriate training in the use of personal protective equipment. Such devices must be available at all times. Note that a **surgical mask** protects others from the wearer; for example, it protects **others** when a TB patient is moved through a corridor, whereas the N95 mask or particulate respirator protects the **wearer**. *It is a waste of resources for TB patients to wear N95 masks and it is a waste of time for anyone else to wear surgical masks.*

Visitors should also wear particulate respirators when in an enclosed space with infectious patients. Considering the risk of stigma that the use of particulate respirators may generate, there should be a strong focus on behaviour-change campaigns for health workers, patients, and communities. Refer to **Factsheet 3.9** Personal protective equipment for prevention of airborne infection including TB; **Factsheet 3.11** General risk map of TB; and **Factsheet 3.12** TB infection risk map for health facilities.

CASE EXAMPLE: Implementing infection control at a TB facility in the Ukraine

Situation: There was a growing risk of nosocomial MDR-TB transmission in hospitals treating TB in the Ukraine.
Action: Taking into consideration resource limitations and the high risk of MDR-TB transmission, a decision was made to separate MDR and susceptible TB patients by opening MDR-TB specific departments with intensified infection control measures.

- A drug resistance survey was conducted to identify the annual number of MDR-TB patients.
- Five TB departments were selected (including in the penitentiary system) for gradual and substantial re-construction.
- UV-lamps and respirators for staff were purchased, ventilation systems installed (excluding the penitentiary system because of unsuitable technical conditions).
- TB infection control (IC) practice was assessed to define gaps in infection control in MDR-TB services and recommendations developed.
- Trainers were trained in TB IC to improve skills and knowledge of the TB staff; an assessment was jointly conducted with international experts and staff of DR-TB departments.

Results and follow-up:

- Infection control committees were established to coordinate IC in TB facilities.
- Training on TB IC for TB dispensary staff and epidemiologists continued.
- IC plans were developed for TB facilities and MDR-TB departments were provided with the necessary equipment.
- Air quality assessment tools for environmental controls were purchased.
- National IC Guidelines were developed in accordance with international standards.
- **Costs and sustainability:** The costs were the reconstruction of the relevant departments.

Personal communication from Dr Ihor Perehinets, Communicable Diseases officer, WHO Country Office in Ukraine, Donetsk Oblast TB Hospitals, 2011.

CASE EXAMPLE: SARS in Canada

Situation: The 2003 SARS (Severe Acute Respiratory Syndrome) outbreak had a profound impact on infection control and occupational health professionals working in acute care facilities in Canada.

Action: Prior to the SARS outbreak, infection control was carried out by health workers according to their workplace policy, with little monitoring of effectiveness. After the SARS outbreak, health workers across the country became more motivated to request advice on the appropriate use of personal protective equipment and isolation policies. Key issues identified were,

(1) The lack of negative pressure rooms in most acute care facilities; and

(2) Many health workers were neither fit tested for N95 respirators nor trained in their use.

Results: Lessons learned from this crisis were that health-care workers' perception of personal risk is a strong motivator for increased compliance with IC policy. The institution's focus on health worker safety is most critical. Without adequate allocation of resources to support IC compliance, health workers may perceive a decreased value in following procedures. Health service facilities need to foster the conditions where workers feel supported by their administration and feel that health worker safety is a priority.

Gamage, B., in R. Rebman, 2007.

Checkpoint 3.4

Implement a comprehensive workplace programme for HIV and TB prevention and care

WHY?

- Many health workers face exposure to HIV and TB daily as part of their work. In spite of the co-infection between HIV and TB, most HIV and TB programmes have not included coverage for health-care providers. This checkpoint therefore addresses HIV-TB prevention, treatment, and care programmes for health workers.
- Health workers are expected to provide HIV and/or TB prevention, diagnosis, treatment, and care. Fears of being infected themselves have contributed to stigma and discrimination towards HIV and TB patients by workers in health facilities and have also caused significant numbers of workers to leave the profession. It is the responsibility of the health service to protect the health and rights of health workers by ensuring that health providers are themselves given access to necessary prevention, diagnosis, and treatment for TB and HIV. This in turn facilitates the provision of quality health care.
- Health workers who work with HIV and TB patients are also subject to stigmatization and discrimination because of their association with people living with HIV and/or TB. Health workers who may have contracted HIV are often afraid to have their HIV status disclosed for fear of losing their jobs. Such fear compromises not only their own health by increasing the risk of acquiring TB co-infection and hindering timely diagnosis and treatment, but also increases the risk of workplace transmission.
- The presence of HIV infection can make TB diagnosis more difficult; however, timely and complete TB treatment slows down the progression of HIV while improving the health of those infected. The provision of Isoniazid preventive therapy to those with HIV could reduce the risk of them developing active TB even if they have latent TB. It is thus critical to address both TB and HIV together.
- The international labour standard on HIV and the world of work affirmed the rights of all workers to protection from HIV as well as access to treatment, care and support, including occupational and social protection coverage; the ILO Recommendation concerning HIV and AIDS and the World of Work, 2010 (No. 200).

WHAT?

A study by Corbett of health workers in five countries revealed their preference for taking up HIV testing in their own work setting rather than through external referrals. They also preferred receiving Antiretroviral Therapy (ART) at their own facilities or staff clinic; refer to the two graphs that follow (Corbett, 2007).

Figure 3.5

Likelihood of using different types of priority services for Antiretroviral Therapy (ART) by health workers

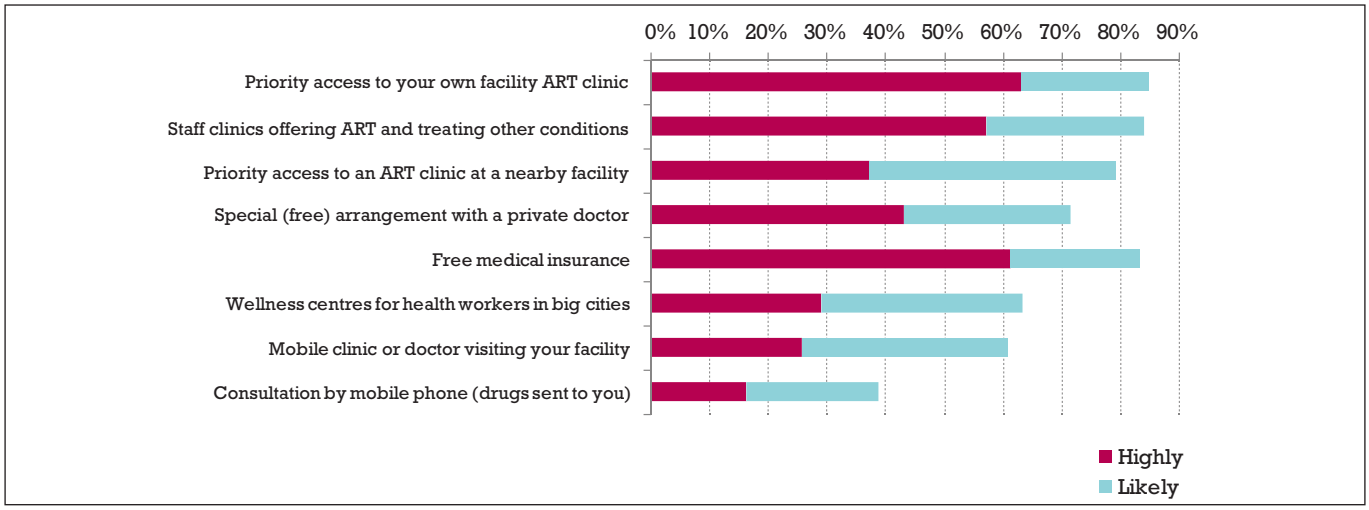
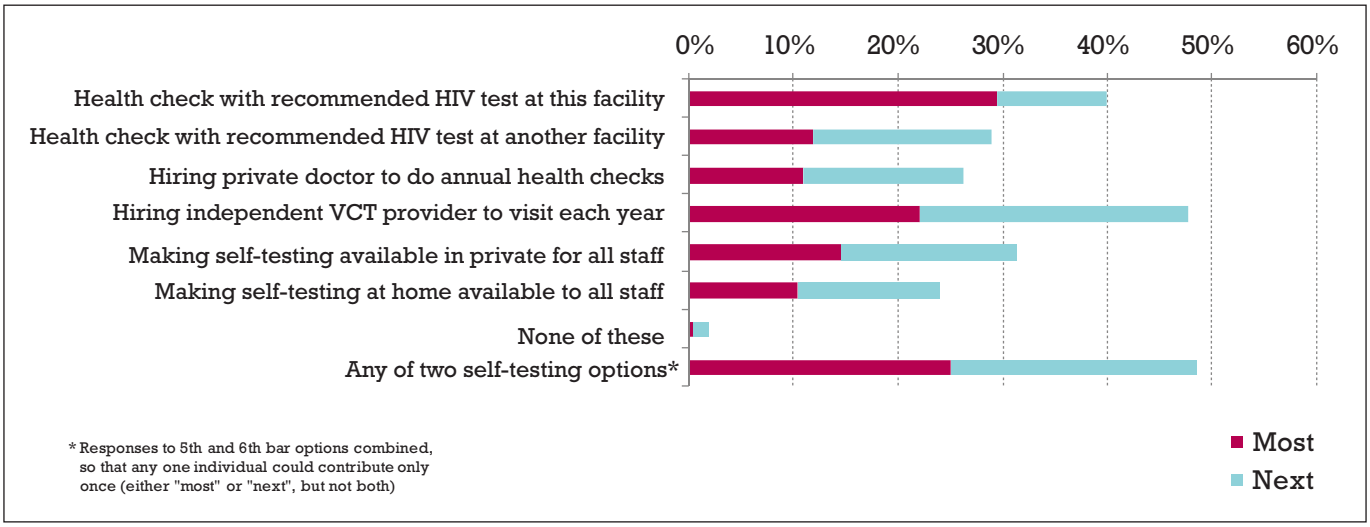


Figure 3.6

Choice of most and next-most successful strategies for increasing HIV testing by health workers.



HIV and TB package for health workers

All health workers should be given appropriate information and encouraged to undergo TB diagnostic investigation if they have symptoms suggestive of TB. Similarly, all health workers should be given appropriate information and encouraged to undergo voluntary HIV testing and counselling. If diagnosed with HIV, they should be offered a package of prevention, treatment and care that includes regular screening for active TB and access to antiretroviral therapy. If they are diagnosed with active TB, health workers should be put on either Isoniazide Preventive Therapy or a full regimen of anti-TB treatment. HIV-positive health workers should not work with patients with known or suspected TB, especially not with patients with MDR-TB and XDR-TB. If necessary they should be relocated from high-TB-exposure-work to a lower risk area.

HOW?

Antiretroviral therapy to control the progression of HIV infection and effective TB treatment must be made available to health workers. The earlier the diagnosis and treatment, the more effective it will be and the fewer the complications. For this reason, it is important that health workers know their status and have regular monitoring for infection. The ILO and UNAIDS jointly launched a global initiative for VCT@work in 2013. The promotion of voluntary counselling and testing at and through the workplace facilitates early detection and treatment and contributes to the global target of zero new HIV infections.

Workplace VCT initiative

The VCT@work initiative aims to reach five million women and men workers by 2015, including their families, dependents, and surrounding communities. Health workers are one of the key targets, in view of their occupational exposure to HIV. The VCT campaign for health workers is being implemented in partnership with Ministries of Labour, workers' trade unions, employers, Ministries of Health, National AIDS Councils, VCT providers, and ART centres, building on existing country testing structures including HIV self-testing.
The VCT@work initiative is based on the following pillars:

- consent;
- confidentiality;
- counselling;
- convenience;
- connection to care.

In accordance with the principles of the HIV and AIDS Recommendation, 2010 (No. 200), the following conditions must be applied to VCT@work:

- It should be voluntary.
- It should be confidential.
- Health workers should not be discriminated against because of their HIV infection.
- Provide reasonable accommodation for health workers with HIV; that is to modify their job assignments and thus reduce risks of exposure to TB or to switch tasks based on their ability to handle the work, so as to enable their continued work.
- Sick leave arrangements should be the same as for other medical conditions.

Post-Exposure Prophylaxis (PEP)

PEP is short-term antiretroviral treatment to reduce the likelihood of HIV or Hepatitis B infection after potential exposure. In health facilities, PEP should be provided as part of a standard precautions package. PEP is unfortunately not available at present for Hepatitis C exposure, though early treatment of HCV has shown promise.

PEP procedures

- Provide first aid immediately: wash wounds and skin exposed to blood or body fluids with soap and water and flush mucous membranes with water.
- Assess exposure for potential HIV or other blood-borne infections (based on type of substance, parts of body being exposed, and severity of exposure).
- Test the exposure source (patient, other materials, etc.) for HIV, Hepatitis B and C infection.
- Test the health workers who were exposed and accompany it by counselling and care referral.
- Maintain confidentiality of both health worker and patient.
- Ensure follow-up testing and clinical evaluation.
- Provide PEP if needed, with counselling.
- Analyse cases of exposure to improve practice.
- Have an established compensation procedure in the event of claims.

In an effort to strengthen health systems while protecting health workers, the ILO, WHO, and UNAIDS have developed joint policy guidelines and an accompanying guidance note on *Improving Health Workers' Access to HIV and TB Prevention, Treatment, Care and Support Services*. The box that follows sets out the list of recommended workplace actions in the joint guidelines.

Joint WHO–ILO–UNAIDS policy guidelines on improving health workers' access to HIV and TB prevention, treatment, care and support services:

Workplace Actions

1. Develop, strengthen or expand existing **occupational health services for the entire health workforce** so that access to HIV and TB prevention, treatment, and care can be attained.

2. Develop or **strengthen** existing **infection control** programmes, especially with respect to TB and HIV infection control, and collaborate with workplace health and safety programmes to ensure a safer work environment.

3. Develop, implement and extend programmes for **regular, free, voluntary, and confidential HIV counselling and testing, and TB screening**, including addressing reproductive health issues, as well as intensified case finding in the families of health workers with TB.

4. Identify, adapt and implement **good practices** in occupational health and the management of HIV and TB **in the workplace** in both public and private health care sectors, as well as other sectors.

5. Provide information on benefits and risks of **post-exposure prophylaxis** (PEP) to all staff and provide free and timely PEP for all exposed health workers, ensuring appropriate training of PEP providers.

6. Provide **free HIV and TB treatment** for health workers in need, facilitating the delivery of these services in a non-stigmatizing, gender-sensitive, confidential and convenient setting when there is no staff clinic and/or their own facility does not offer ART, or where health workers prefer services off-site.

7. In the context of preventing co-morbidity, **provide universal availability of a comprehensive package of prevention and care for all HIV positive health workers**, including isoniazid preventive therapy and co-trimoxazole prophylaxis, with appropriate information on benefits and risks.

8. Develop and implement **training programmes for all health workers that include:** pre-service, in-service and continuing education on TB and HIV **prevention, treatment, care and support**; workers' rights and stigma reduction, integrating these into existing training programmes, and including managers and workers representatives.

WHO, ILO, UNAIDS, 2010

Workplace policies, collective agreements or action plans, if not already existing, should be established as part of an implementation strategy for the joint guidelines. They should be gender-specific and take a stand against sexual harassment and gender-based violence. Practical workplace support measures can include the following:

- train peer educators (frontline health workers);
- promote regular VCT;
- provide condoms;
- promote prevention of mother-to-child transmission and provide this service;
- support peer-support groups, referral for counselling, treatment, and care.

CASE EXAMPLE: Health workers' wellness centre

Situation

The HIV prevalence in Swaziland is high, both medical doctors and nurses are among those infected. Many of the health workers fear disclosure of their HIV status and thus postpone seeking HIV testing and treatment. Aiming to overcome the reluctance of nurses to seek treatment, as well as encouraging open discussion of discrimination against patients, the nurses association decided to mobilize their members to take action.

Action

The Swaziland Nurses Association (SNA), with the support of management, set up a wellness centre for staff in the capital's main hospital as part of a comprehensive wellness package for health workers. The centre offers counselling, voluntary HIV and TB testing, treatment and stress management. 'Wellness corners' have been set up in several smaller health facilities, and the SNA also organizes Dialogues for Nurses on HIV and AIDS across the country.

Results

This workplace wellness corner not only helped the nurses to have early HIV diagnosis and in accessing needed treatments; the nurses, once they felt being supported and safe at work helped reduce the stigma and discrimination felt by patients from the health services.

Public Services International, 2011.

Factsheet 3.1
Biological hazards

Biological hazards, also known as biohazards, are organic substances that pose a threat to the health of humans and other living organisms. The essential difference between biological agents and other hazardous substances is their ability to reproduce. A small amount of a microorganisms may grow considerably in a very short time under favorable conditions. The most common biohazards are:

- **Bacteria;** e.g. E. Coli, tuberculosis, tetanus.
- **Viruses;** e.g. influenza, the corona virus which causes SARS, Hepatitis, and HIV.
- **Fungi;** e.g. thrush.

Health workers are exposed to biohazards via contact with body fluids such as blood, urine, faeces, or cell cultures, which can contain virus or bacteria. Kitchen staff who work with animal products (blood, tissue, milk, eggs) can also be exposed to diseases and infections.

Some infectious agents are transmitted directly:

- Through physical contact between an infected and non-infected person.
- When droplets are projected, by a cough or a sneeze, into the mucous membranes of another person's nose, eyes, or mouth.
- When a person is injected or punctured by an infected object, such as a needle.

Other infectious agents are transmitted indirectly:

- By attaching themselves to food, water, cooking or eating utensils.
- When an insect (the vector) carries them from an infected to a non-infected person.

Biological hazards enter the body through:

- **Inhalation:** breathing.
- **Absorption:** direct contact through breaks in the skin –even chapped skin or a hangnail, or through mucous membranes.
- **Ingestion:** swallowing.
- **Injection:** through a puncture in the skin.

European Agency for Safety and Health at Work: Biological Agents, 2003.

Factsheet 3.2
Sample HIV risk assessment checklist

Recapping needles:

- Does the provider recap the needle?

Yes: Always ☐ Sometimes ☐

No: Never ☐

- If yes, does h/she recap with one hand ☐ or two hands ☐?

Sharps containers:

- Where are sharp devices placed after use? _____
  _____
- Are sharps' containers located within arm's reach?
  Yes ☐ No ☐
- Are sharps' containers located at or below eye-level?
  Always ☐ Never ☐
- Are sharps' containers filled below 2/3 capacity?
  Always ☐ Never ☐
- Are the sharps' containers manufactured for this purpose ☐ or adapted from other use? ☐

Personal protective equipment:

- Do providers use gloves?
  Always ☐ Sometimes ☐ Never ☐
- What is the type of gloves available?
  Latex ☐ Nitrite ☐ Neoprene ☐
- Do providers use eye-protection?
  Always ☐ Sometimes ☐ Never ☐
- What is the type of eye protectors?
  Safety glasses ☐ Goggles ☐
  Others: _____

Specific high-risk procedures observed at the worksite:

Phlebotomy/drawing blood

- Device used: needle and syringe
  ☐ butterfly needle ☐ vacuum tube collector
  ☐ other_____
- Do these devices have safety features?
  Yes ☐ No ☐
- Does the provider recap? Never ☐
  with one hand ☐ with two hands ☐
- After use, are sharps placed in a sharps container?
  Always ☐ Sometimes ☐ Never ☐

Intravenous line insertion

- Type of needle and catheter used: _____
- Do these devices have safety features?
  Always ☐ Sometimes ☐ Never ☐
- Are needleless devices used for supplemental lines (piggyback)?
  Always ☐ Sometimes ☐ Never ☐
- Does the provider recap?
  Never ☐ With one hand ☐ With two hands ☐
- After use, are sharps placed in a sharps container?
  Always ☐ Sometimes ☐ Never ☐

Injections

- Are any syringes or needles re-sterilized for use?
  Never ☐ Sometimes ☐ Always ☐
- Do devices have safety features?
  Always ☐ Sometimes ☐ Never ☐
- Does the provider recap?
  Never ☐ With one hand ☐ With two hands ☐
- After use, are sharps placed in a sharps container?
  Always ☐ Sometimes ☐ Never ☐

Surgical interventions

- Is a neutral zone used (an individual places the tool on a sterile field for the surgeon to pick-up and use)?
  Always ☐ Sometimes ☐ Never ☐

Factsheet 3.3
First-aid on exposure to blood-borne pathogens

After percutaneous exposure:

- Allow the wound to bleed freely.
- Do not squeeze or rub the injury site.
- Wash site immediately using soap or a mild solution that will not irritate the skin.
- If running water is not available, clean site with a gel or hand-cleaning solution.
- **Do not** use any strong solutions, such as bleach, iodine or alcohol-based products because these products may irritate the wound and make the injury worse.

After a splash of blood or body fluids onto unbroken skin:

- Wash the area immediately with running water.
- If running water is not available, clean the area with a gel or hand-cleaning solution.
- **Do not** use alcohol-based antiseptics.

After exposure of the eye:

- Irrigate exposed eye immediately with water or normal saline.
- Sit in a chair, tilt the head back and ask a person to gently pour water or normal saline solutions over the eye, gently pulling the eyelids up and down to make sure the eye is cleaned thoroughly.
- If wearing contact lenses, leave them in place while irrigating, as they form a barrier over the eye and will help protect it. Once the eye has been cleaned, remove the contact lenses and clean them in the normal manner. This will make them safe to wear again.
- **Do not** use soap or disinfectant on the eye.

After exposure of the mouth:

- Spit the fluid out immediately.
- Rinse the mouth thoroughly, using water or normal saline, and spit out again. Repeat this process several times.
- **Do not** use soap or disinfectant in the mouth.

In all cases, the incident should be recorded and reported indicating clearly: who, when, where, what, how.

Factsheet 3.4
WHO Aide-mémoire on hepatitis B vaccination

Aide-mémoire for an effective approach to the immunization of health workers against Hepatitis B

Are health workers at risk of exposure to Hepatitis B virus (HBV)?

Yes: HBV is an important occupational hazard for health workers.
Approximately 37% of hepatitis B infections among health workers worldwide are the result of occupational exposure.
The World Health Organization (WHO) recommends that health workers be vaccinated against HBV.
The **WHO Global Plan of Action on Workers' Health** calls upon member countries to develop and implement occupational policies and programs for health workers, including Hepatitis B immunization.

What is Hepatitis B?

HBV is a viral infection that attacks the liver and can cause both acute and chronic disease that can be life-threatening. Persons with chronic HBV infection have a 15 to 25% risk of dying prematurely from HBV-related cirrhosis and liver cancer. Worldwide, an estimated two billion people have been infected with HBV, and more than 350 million have chronic liver infections.
Health workers can become infected with HBV by exposure to even small amounts of blood from needle-stick injuries or punctures with blood-contaminated equipment.

How can health workers be protected against HBV?

- Immunize
- Adhere to standard precautions
- Train health workers about mode of transmission and preventive measures
- Ensure access to post-exposure management services
- Record and report exposure to blood and body fluids

Be prepared: Addressing commonly asked questions related to the hepatitis B vaccine

What is the efficacy and safety of the Hepatitis B vaccine?

The Hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences. The hepatitis B vaccine has been used since 1982 and over one billion doses have been administered worldwide.

What are the benefits of being vaccinated against Hepatitis B?

Hepatitis B vaccination protects and promotes the health of health workers, patients and families. For employers, a vaccinated workforce contributes to the availability of a healthy workforce.

What are the potential adverse effects of the Hepatitis B vaccine?

Potential adverse effects include redness, swelling, and pain at the injection site. Serious effects are very rare, difficulty breathing, rashes and shock have been reported.

Checklist

Ensuring a Successful Vaccination Campaign Targeting Health Workers

Action Plan for immunizing health workers

- ☑ Identify responsible authority (e.g. occupational health unit)
- ☑ Implement occupational health and immunization policy and guidelines
- ☑ Integrate immunization activities within existing health and safety plan
- ☑ Allocate human and financial resources

Effective strategies to increase vaccination coverage

- ☑ Demonstrate management commitment towards the health of employees including providing resources needed to prevent exposure
- ☑ Provide and promote accessible and free on-site vaccination
- ☑ Establish participation in vaccination by signed consent or declination
- ☑ Educate health workers about the occupational risks associated with HBV, the efficacy of vaccination and other preventive measures
- ☑ Repeat reminders to ensure completion of all three doses of Hepatitis B vaccine
- ☑ Integrate immunization into pre-employment orientation for employees and students
- ☑ Monitor immunization coverage regularly

Who should be immunized?

- ☑ Any health worker who performs tasks involving direct patient contact or handles blood-contaminated items is at risk:
  - Physicians, nurses, laboratory workers, dentists, pharmacists, aids, and allied health professionals
  - Support staff, such as transporters, cleaners, and waste collectors
- ☑ Students training in the field of health care

Hepatitis B immunization

- ☑ Recommended schedule: 0, 1, and 6 months
- ☑ Dose: 1mL intramuscular injection
- ☑ Serological testing:
  - Pre-vaccination: not indicated
  - Post-vaccination: not required as part of a routine programme

WHO, (2007).

Fact sheet 3.5
Comprehensive approach to the prevention of occupational transmission of blood-borne pathogens among health workers

Key elements at a glance

1. Apply Hierarchy of Controls

Methods to control the transmission of blood-borne pathogens (BBPs) in order of effectiveness. The optimal prevention measure is to eliminate the hazard directly at the source.

START HERE	EXAMPLES
1. Elimination Remove hazard from the work area	☑ Eliminate all unnecessary injections ☑ Use jet injectors and needleless IV systems
2. Engineering controls Isolate or remove a hazard from the workplace	☑ Puncture-resistant sharps safety boxes ☑ Blunt or retractable needles
3. Administrative controls Implement policies, procedures, and training programs to reduce exposure hazards	☑ Needle-stick injury prevention committee ☑ Standard precautions ☑ Training on occupational hazards and preventive measures ☑ Comply with international guidelines on health care waste management
4. Work practice controls Reduce exposure to occupational hazards through changing work practices	☑ No recapping of needles ☑ Sharps safety boxes located at arm's reach ☑ Sharps safety boxes emptied at 2/3 capacity
5. Personal Protective Equipment (PPE) Place barriers between the worker and the hazard	☑ Appropriate use of PPE based on the risk of exposure to blood and body fluids (mask and eye protection, gloves, gown, and plastic apron, etc.)

2. Provide training to health workers

Health workers need to know their risk and how to protect themselves against blood-borne pathogens.
Key training components include:

- Risk of infection and mode of transmission; and efficacy of preventive measures
- Legal rights and obligations related to occupational health and safety
- Reporting procedures for needle-stick injuries and other blood and body fluid exposures
- Practice on the proper use of personal protective equipment
- Regular updates, training, and orientation on new products and procedures

3. Implement Standard Precautions

Standard precautions are a simple set of effective practices designed to protect health workers and patients from infectious pathogens from recognized and unrecognized sources. These include:

- Ensure hand hygiene products availability (e.g. clean water, soap, single-use clean towels, alcohol-based hand rub)
- Comply with WHO hand hygiene practices
- No recapping of needles
- Use and availability of puncture- and liquid-proof sharps safety boxes at site of use
- Use proper personal protective equipment based on the type of exposure to blood (gloves, gown, mask and eye protection, face shield, etc.)
- Use gloves for contact with blood, non-intact skin, and mucous membranes
- Cover all cuts and abrasions on workers with a waterproof dressing
- Clean spills of blood promptly and carefully

4. Ensure access to post-exposure management

- Implement guidelines to include first aid, reporting mechanisms, and procedures to be followed for post-exposure follow-up (risk assessment, prophylaxis, and management)
- Provide a conducive, blame free, and confidential environment to workers reporting exposure
- Where possible and indicated, provide post-exposure prophylaxis (Hepatitis B immune globulin for positive source) and Hepatitis B vaccine if not previously immunized
- Record exposure by using a standard surveillance system (e.g. EPINet)
- Use exposure record data for prevention by recommendations for changes in policy, practices or products.

Tools to prevent exposure to BBPs

PAHO, WHO, and the United States National Institute of Occupational Safety and Health (NIOSH) have developed a free toolkit aimed at preventing BBP transmission:
'Protecting Healthcare Workers: Preventing Needlestick Injuries Toolkit' http://who.int/occupational_health/activities/pnitoolkit/en/index.html (English) http://who.int/occupational_health/activities/pnitoolkit/es/index.html (Spanish)

Additional resources: Workers' Health and Safety in the Health Sector http://www.bvsde.ops-oms.org/sde/ops-sde/ingles/bv-saludtrab.shtml

WHO, (2007).

Factsheet 3.6
WHO Aide-Mémoire on Standard precautions in health care

Background

Standard precautions are meant to reduce the risk of transmission of bloodborne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients.

Hand hygiene is a major component of standard precautions and one of the most effective methods to prevent transmission of pathogens associated with health care. In addition to hand hygiene, the use of **personal protective equipment** should be guided by **risk assessment** and the extent of contact anticipated with blood and body fluids, or pathogens.

In addition to practices carried out by health workers when providing care, all individuals (including patients and visitors) should comply with infection control practices in health care settings. The control of the spread of pathogens from the source is key to avoid transmission. Among source control measures, **respiratory hygiene/cough etiquette**, developed during the severe acute respiratory syndrome (SARS) outbreak, is now considered as part of standard precautions.

Worldwide escalation of the use of standard precautions would reduce unnecessary risks associated with health care. Promotion of an **institutional safety climate** helps to improve conformity with recommended measures and thus subsequent risk reduction. Provision of adequate staff and supplies, together with leadership and education of health workers, patients, and visitors, is critical for an enhanced safety climate in health care settings.

Important advice

- Promotion of a safety climate is a cornerstone of prevention of transmission of pathogens in health care.
- Standard precautions should be the minimum level of precautions used when providing care for all patients.
- Risk assessment is critical. Assess all health care activities to determine the personal protection that is indicated.
- Implement source control measures for all persons with respiratory symptoms through promotion of respiratory hygiene and cough etiquette.

Checklist

Health policy

- ☑ Promote a safety climate.
- ☑ Develop policies which facilitate the implementation of infection control measures.

Hand hygiene

- ☑ Perform hand hygiene by means of hand rubbing or hand washing (see detailed indications in table).
- ☑ Perform hand washing with soap and water if hands are visibly soiled, or exposure to spore-forming organisms is proven or strongly suspected, or after using the restroom. Otherwise, if resources permit, perform hand rubbing with an alcohol-based preparation.
- ☑ Ensure availability of hand-washing facilities with clean running water.
- ☑ Ensure availability of hand hygiene products (clean water, soap, single use clean towels, alcohol-based hand rub). Alcohol-based hand rubs should ideally be available at the point of care.

Personal protective equipment (PPE)

- ☑ **Assess the risk** of exposure to body substances or contaminated surfaces **before** any health care activity. Make this a routine!
- ☑ Select PPE based on the assessment of risk:
  - clean non-sterile gloves
  - clean, non-sterile fluid-resistant gown
  - mask and eye protection or a face shield.

Respiratory hygiene and cough etiquette

- Education of health workers, patients and visitors.
- Covering mouth and nose when coughing or sneezing.
- Hand hygiene after contact with respiratory secretions.
- Spatial separation of persons with acute febrile respiratory symptoms.

WHO, (2007a).

Factsheet 3.7
Health care facility recommendations for standard precautions

Key elements at a glance

1. Hand hygiene

Summary technique:

- Hand washing (40–60 sec): wet hands and apply soap; rub all surfaces; rinse hands and dry thoroughly with a single use towel; use towel to turn off faucet.
- Hand rubbing (20–30 sec): apply enough product to cover all areas of the hands; rub hands until dry.

Summary indications:

- Before and after any direct patient contact and between patients, whether or not gloves are worn.
- Immediately after gloves are removed.
- Before handling an invasive device.
- After touching blood, body fluids, secretions, excretions, non-intact skin, and contaminated items, even if gloves are worn.
- During patient care, when moving from a contaminated to a clean body site of the patient.
- After contact with inanimate objects in the immediate vicinity of the patient.

2. Gloves

- Wear when touching blood, body fluids, secretions, excretions, mucous membranes, nonintact skin.
- Change between tasks and procedures on the same patient after contact with potentially infectious material.
- Remove after use, before touching non-contaminated items and surfaces, and before going to another patient. Perform hand hygiene immediately after removal.

3. Facial protection (eyes, nose, and mouth)

- Wear (1) a surgical or procedure mask and eye protection (eye visor, goggles), or (2) a face shield to protect mucous membranes of the eyes, nose, and mouth during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.

4. Gown

- Wear to protect skin and prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.
- Remove soiled gown as soon as possible, and perform hand hygiene.

5. Prevention of needle stick and injuries from other sharp instruments

Use care when:

- Handling needles, scalpels, and other sharp instruments or devices.
- Cleaning used instruments.
- Disposing of used needles and other sharp instru- ments.

6. Respiratory hygiene and cough etiquette

Persons with respiratory symptoms should apply source control measures:

- Cover their nose and mouth when coughing/sneezing with tissues or masks, dispose of used tissues and masks, and perform hand hygiene after contact with respiratory secretions.

Health care facilities should:

- Place acute febrile respiratory symptomatic patients at least 1 metre (3 feet) away from others in common waiting areas, if possible.
- Post visual alerts at the entrance to health care facilities instructing persons with respiratory symptoms to practise respiratory hygiene/cough etiquette.
- Consider making hand hygiene resources, tissues and masks available in common areas and areas used for the evaluation of patients with respiratory illnesses.

7. Environmental cleaning

- Use adequate procedures for the routine cleaning and disinfection of environmental and other frequently touched surfaces.

8. Linens

- Handle, transport, and process used linen in a manner which:
  - Prevents skin and mucous membrane exposures and contamination of clothing.
  - Avoids transfer of pathogens to other patients and/or the environment.

9. Waste disposal

- Ensure safe waste management.
- Treat waste contaminated with blood, body fluids, secretions and excretions as clinical waste, in accordance with local regulations.
- Human tissues and laboratory waste that is directly associated with specimen processing should also be treated as clinical waste.
- Discard single use items properly.

10. Patient care equipment

- Handle equipment soiled with blood, body fluids, secretions, and excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of pathogens to other patients or the environment.
- Clean, disinfect, and reprocess reusable equipment appropriately before use with another patient.

WHO Guidelines on Hand Hygiene in Health Care (Advanced draft) Available at: http://www.who.int/patientsafety/information_centre/ghhad_download /en/index.html.

The SIGN Alliance at: http://www.who.int/injection_safety/sign/en/

WHO, (2007a).

Factsheet 3.8
Personal protective equipment for blood-borne hazards protection

Safety goggles/glasses and face shields

These protect the eyes from contact with infected blood, droplets or other body fluids which may enter the body through the mucous membranes.

Standard goggles should be used (for example, EU EN 166; U.S. ANSI Z87.1-1989). Goggles should fit the face snugly to provide adequate protection; if necessary, a face shield should be used to protect the whole face. Glasses without side shields can only protect the front from liquid splashes.

Both face shields and goggles/glasses should be cleaned with liquid soap regularly. If contaminated by blood, they should be soaked in 1:49 diluted liquid bleach and then rinsed with clean water. Place them in plastic bags after wiping dry and store them in a cabinet. Check them regularly and replace if out of shape, cracked, scratched, or loosened.

Gloves

These protect the hands from contact with blood, droplets, other body fluids and tissues, or pathogen-contaminated objects. They can also protect open wounds from infection.

Most gloves are disposable after each use. Check the chemical resistance of the gloves with the supplier. Gloves should fit the hands snugly but they should not hamper movement or affect sensibility.

- Keep the nails short to avoid piercing the gloves.
- Two pairs of gloves can be worn if handling highly hazardous substances.
- Wash and dry hands thoroughly before and after use.
- Check for tears or punctures before use.
- Contaminated gloves should be disposed of in special rubbish bags marked with the 'Biological hazard' warning. Fasten the bag and place it in a designated location for special disposal

Nitrile or other synthetic gloves are better than latex for handling chemicals and hazardous drugs.

Fact sheet 3.9
Personal Protective Equipment for airborne hazards protection

The selection of protective equipment must be based on an assessment of the risk of transmission of TB bacteria to the patient, or to staff, or to family/community members. Everyone involved in TB care and management should be educated about standard principles and trained in the use of protective equipment. Adequate supplies of single use gloves and masks/respirators should be made available wherever care is delivered. Disposable plastic aprons or gowns should be made available when advised by the infection control team.

Four types of personal protective equipment:

1. Masks/respirators (fit testing, duration of usage, storage)

It is essential to understand the difference between face masks and respirators.

Facial masks /Surgical masks:

- Do prevent the spread of microorganisms from the wearer to others by capturing large wet particles.
- DO NOT provide protection to the wearer from inhaling small infectious droplet in the air.
- Must be large enough to fully cover the nose, lower face, jaw and facial hair.
- Must be made of fluid resistant materials.
- Should be considered for suspect and known TB patients leaving isolation rooms for essential medical procedures.

Respirators:

- Protect the wearer from inhaling droplets.
- Filter out infectious aerosols.
- Fit closely to the face to prevent leakage around the edges.

N95 respirators (USA standards) or FFP2 and FFP3 (European standards) effectively filter out ≥95% of the particles 0.3μm in aerodynamic diameter. Use of N95, FFP2, or FFP3 respirators are recommended for HCWs caring for patients with confirmed or suspected infectious TB (in particular MDR-TB) and HCWs performing aerosol-generating procedures on infectious TB patients: bronchoscopy, intubation, sputum induction, use of high speed devices for lung surgeries, or autopsies. They are disposable but may be re-used. Humidity, dirt or crushing are the main factors that lead to deterioration of respirators.

HCWs should be fit-tested for personal protective equipment because if the respirator is not fitted correctly, infectious droplet nuclei can easily enter, potentially resulting in infection. Health workers need training on proper respirator use. Respirators need to be worn by all personnel entering high-risk areas, such as sputum induction rooms, bronchoscopy rooms, autopsy rooms, DR-TB patient rooms, or any location where there are known or suspected patients with TB.

Whenever respirators are used, a respirator programme is necessary.

- Written procedures should describe when and how respirators are to be used.
- HCWs should be screened to be sure they are physically capable of performing tasks when wearing a respirator.
- Training should include information on the risk of TB transmission and how to prevent it, together with the appropriate use of respirators.
- Respirators should be selected that meet standards for protection (N95, FFP2, or FFP3). Several sizes are necessary to fit a range of faces. Annual fit testing should be conducted to ensure the ordering, supplying, and stocking appropriate respirators.
- Storage of respirators must be only in dry and clean places (not in plastic bags) and never try to decontaminate a respirator.
- The respirator programme should be evaluated periodically.

Employees should pass a fit test:

- Prior to initial use, and then thereafter periodically.
- Whenever a different respirator face piece is used (size, type, model or make).
- Whenever changes in the worker's physical condition or job description that could affect the respirator fit are noticed or reported.

Fact sheet 3.9
(continuation)

2. Gloves

Wearing gloves does not replace the need for hand washing. Gloves must be worn for all activities that have been assessed as carrying a risk of exposure to blood, body fluids, secretions and excretions; for collecting sputum samples; handling contaminated items or surfaces; for contact with sterile sites, and non-intact skin or mucous membranes; and when handling sharp or contaminated instruments.

- Gloves must be worn as single use items. They are put on immediately before an episode of patient contact or treatment, and removed as soon as the activity is completed.
- Gloves are changed between caring for different patients, or between different care/treatment activities for the same patient.
- Gloves must be disposed of as clinical waste and hands decontaminated, ideally by washing with liquid soap and water after the gloves have been removed.
- Gloves must be available in all clinical areas.
- Sensitivity to natural rubber latex in patients and staff must be documented and alternatives to natural rubber latex must be made available.

Glove DOs:

- DO wear the correct size.
- DO change gloves during prolonged cases.
- DO keep fingernails short.
- DO use water-soluble hand cream and moisturizers.

Glove DON'Ts:

- DON'T use oil-based hand lotions or creams.
- DON'T use perfumed hand lotions or creams.
- DON'T store gloves in areas with extreme temperatures.

3. Plastic aprons/gowns

Plastic aprons and gowns materials should be fluid resistant to provide protection from body fluids. They must be worn when in close contact with the patient and when there is a risk that clothing may become contaminated with pathogenic microorganisms or blood, body fluids, secretions or excretions.

Plastic aprons/gowns should be worn as single-use items, for one procedure or episode of patient care, and then discarded and disposed of as clinical waste.

4. Eye protection

These are clear plastic goggles, safety glasses, face shields, and visors. Goggles provide the best eye protection. Eye protection must be worn where there is a risk of blood, body fluids, secretions or excretions splashing into the face and eyes.

Factsheet 3.10
Hand hygiene

Hand hygiene is an effective measure in preventing the spread of infection but often neglected. Good hand hygiene can significantly reduce infections and should be practised even if gloves are worn. Hand hygiene can be achieved by hand washing or the use of alcohol-based hand rubs.

Hand washing should be performed using:

- Liquid soap/skin disinfectant.
- Warm running water.
- Friction.
- Thorough drying with disposable paper towels.

Hands should be washed with skin disinfectant; e.g. chlorhexidine:

- Before an antiseptic procedure.
- After contact with body secretions and excretions; e.g. sputum.
- After handling contaminated laundry or equipment.
- After spillage cleaning.
- After removal of items of contaminated protective clothing; e.g. masks, respirators, gloves, aprons.

Hands should be washed with liquid soap:

- Before starting work and at the completion of each task.
- Before and after caring for any patient.
- Whenever hands are visibly soiled or contaminated with dirt or organic matter (e.g. following the removal of gloves).
- Before serving meals or drinks.
- Before the administration of medication.
- After toilet use.
- Hands should be decontaminated between caring for different patients or between different care activities for the same patient.
- Cuts and abrasions must be covered with waterproof dressings.
- Fingernails should be kept short, clean, and free from nail polish. False nails should not be worn by clinical staff.
- Hand hygiene resources and individual practice should be audited regularly and the results fed back to health care workers.
- Education and training in risk assessment, effective hand hygiene and glove use should be part of staff training.

Use of antiseptic hand rub:

- Alcohol-based hand rub is a convenient and efficient alternative to hand washing between caring for different patients or between different caring activities for the same patient as long as hands are not soiled. They must be free of dirt and organic material. The hand rub solution must come in contact with all surfaces of the hand. The hands must be rubbed together vigorously, paying particular attention to the tips of the fingers, until the solution has evaporated and the hands are dry. Hands should be washed with soap and water after several consecutive applications of alcohol and rub.
- Staff should be aware of the potentially damaging effects of hand decontamination products. They should be encouraged to use an emollient hand cream regularly, before going on duty and when off duty, to maintain the integrity of the skin. Alcohol-based hand rub should be made easily available to patients in all health care facilities.

Factsheet 3.11
TB general risk map

Exposure	The risk of exposure increases with the duration of contact, overcrowding, poor ventilation and TB prevalence in the area.
Infection	The risk of infection depends on the number of bacilli inhaled (increases with longer exposure), the strength of the bacilli, the immunity of an individual (whether h/she has cancer, HIV, etc.), and contact with known infected individuals (family, friends, co-workers).
Active disease	The risk of developing the active disease depends on the individual's general health status, immune status, smoking, alcohol abuse, malnutrition, poverty, age, exposure to industrial fumes and vapor. In the case of contact with known infected individuals, 10 per cent of those infected with TB will develop the active disease.
Drug resistant-TB	The risk of developing DR-TB is from inadequate TB treatment due to poorly understood medication-administration instructions, lack of patient compliance, difficulties accessing treatment, poor quality medication (expired, improperly manufactured), inadequate length or quantity of treatment, or inconsistent medication supplies. Exposure to people with active DR-TB is another risk.
Mortality	Active untreated TB has a 50–70 per cent risk of mortality in five years. Although TB is curable, MDR or XDR-TB are much harder to cure and contribute to higher mortality. Concurrent HIV infection increases the probability of mortality.

Adapted from International Council of Nurses, 2011.

Factsheet 3.12
TB infection risk map at health facilities

General risk in all steps

- Patients unfamiliar with infection control procedures can spread or catch infections.
- Lack of proper ventilation increase the risk of infection in all areas.
- Lack of, or misuse of protective equipment.
- Incorrect application of infection control measures increases risk of infection transmission.
- Overcrowding and poor spacing of appointment schedules leads to longer waiting times and crowded waiting spaces, thus increasing exposure to infectious agents.
- Nurses, doctors, receptionists or orderlies may unknowingly infect and put patients and visitors at risk.

1 **Patient arrival at the health facility**	2 **Patient in waiting area**	3 **Patient meets with nurses**	4 **Patient takes TB diagnostic tests**	5 **Sputum sample reaches the lab**
■ Receptionist is at risk due to frequency of exposure. ■ Undiagnosed TB patients with no knowledge of TB or infection control measures pose the greatest risks to others. ■ Infections can spread among patients, visitors and staff due to undiagnosed cases, lack of infection control measures and overcrowding. ■ Patients not properly educated about infection control practices may spread infection.		■ Patients with symptoms suggesting active TB pose a risk to others and must be separated and diagnosed promptly. ■ Patients with smear positive sputum, cavities on chest X-ray, and forceful, frequent coughing are the most infectious. ■ Patients not adhering to IC measures may infect nurses and others (e.g. coughing on someone's face). ■ Sputum collection poses a great risk and thus must be performed properly (e.g. outdoors, not facing anyone, in a cough booth) ■ Incorrectly produced sputum samples may be wrongly diagnosed as negative thus putting others at risk. ■ Radiology rooms are usually enclosed and poorly ventilated. ■ The sputum samples may be stored inadequately or kept for too long before they reach the lab, especially in facilities which have to outsource tests. ■ Incorrect handling of specimens and machinery puts lab staff at risk.	

6 **Patient with suspected TB is admitted to ward**	7 **Patient with confirmed smear positive TB starts DOT**	8 **Patient stays in the ward to continue treatment (intensive phase)**	9 **Patient converts to smear negative sputum**	10 **Patient returns to community while continuing the course of medical treatment**
■ All risk factors from previous stages apply. ■ Inadequate bed spacing may contribute to cross-infection between different strains. ■ Improper separation of patient groups (HIV/smear positive/drug resistant status). Rooms that host infectious patients, especially drug resistant cases, should not be located in areas that others may have to pass through. ■ Patients and staff may lower their level of adherence to IC measures over time, putting others at risks. ■ Improper treatment (treatment not followed, wrong dosage, irregular administration, wrong medications) hinders recovery and creates risk of developing drug-resistant TB. Delay in diagnosing DR-TB leads to further spread of resistance. ■ Side effects from treatment increase the risk of treatment interruption. ■ Improper monitoring of patients' treatment regime and IC adherence may lead to re-infection. ■ Inadequate hand-washing facilities and practices. ■ Patients moving around the ward without masks, using lifts and sharing toilets. ■ Visitors may not be aware of risks and IC procedures.			■ The person returning to the community may encounter stigmatization and discrimination. ■ The person may return to previous situations or behaviours (e.g. alcohol abuse, homelessness, malnutrition). ■ Once the person feels better, he/she may discontinue treatment prematurely –other priorities may distract the attention. ■ Direct Observation Treatment (DOT) may be difficult in the community. ■ Treatment side effects may lead to interruption of treatment.	

Adapted from International Council of Nurses, 2011.

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Key Resources

- Joint ILO/WHO guidelines on health services and HIV/AIDS, 2005.
  Available at: www.ilo.org/public/english/protection/trav/aids/publ/hsgl.pdf
- Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection, 2008.
  Available at: www.ilo.org/public/english/protection/trav/aids/publ/guidelinestraining.htm
- Joint WHO/ILO/UNAIDS policy guidelines on improving health worker access to prevention, treatment and care services for HIV and TB: A guidance note, 2010.
  Available at: www.ilo.org/aids/Publications/WCMS_149714/lang--en/index.htm
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Module 4:

Tackling discrimination, harassment and violence at the workplace

Violence against health personnel is a widespread problem, with more than 50 per cent of health-care workers having experienced violent incidents at work (International Council of Nurses et al., 2002). It affects all professional groups and work settings in the health sector, and both men and women workers; however, the gender dimension of the problem must be recognized, as the large majority of the health workforce is female. The status of women in society at large has consequences in the workplace which include:
a disproportionate concentration of women in lower status and lower paid jobs and services, making them more vulnerable to those in positions of power;
a lack of measures, ranging from legislation to workplace policies, which protect women; social and cultural pressures which discourage women from defending their own rights.
Women frequently experience discrimination and indimidation at the workplace, including sexual harassment. Discrimination on the basis of sexual orientation may of course affect men as much as women. Violence can take a number of forms, including verbal and physical abuse, bullying, racial and sexual harassment, as well as discrimination (see box).

Workplace violence covers a spectrum of unacceptable behaviours. It includes incidents where staff are abused, threatened, discriminated against or assaulted in circumstances related to their work, including commuting to and from work, and which represent a threat to their safety, health, and well-being.
Physical violence means the use of physical force against another person which results in physical and/or psychological harm. Examples are pushing, pinching, beating, kicking, slapping, stabbing, shooting, and rape.
Psychological violence is a misuse of power, including the threat of physical force, against another person or group that can result in harm to their physical, mental, spiritual, moral or social well-being. It includes stigma and discrimination, and may take a number of forms: verbal abuse, bullying/mobbing, and threats. The abuse of power is exacerbated by gender inequality and finds expression in sexual harassment and discrimination. Similarly racist attitudes lead to racial harassment and discrimination. Long underestimated, psychological violence is now believed to be more frequent than physical violence.

Adapted from Framework Guidelines for Addressing Workplace Violence in the Health Sector, 2002 (International Labour Office / International Council of Nurses / World Health Organization / Public Services International).

In the health sector workers can suffer violence at the hands of patients or others outside the service but patients too may be the victims of health workers, and this means that violence is not only a health and safety issue but also a threat to patient care; violence can also take place between co-workers.
The negative consequences affect not only the victim but the work environment as a whole, causing unease, insecurity, and fear even among staff or patients who are not the direct victims; the impact on efficiency and working conditions can be significant. Affected individuals may react by going into denial, or they may resort to violence themselves.

In 2007, the Rwanda Ministries of Public Service and Health studied workplace violence in the health sector. Thirty-nine per cent of health workers had experienced some form of workplace violence in the previous year. The study identified gender-related patterns of perpetration, victimization, and reactions to violence (Newman et al., 2011).

See Factsheet 4.1 of the Trainers' Guide for further information, including research findings from Canada

The facility should make sure there are always measures in place to deal with conflict or violence, and that staff know what support they can get and what mediation is available. All forms of violent and discriminatory behaviour need to be prevented and controlled through a combination of policies, protocols, education and training. A universal and non-negotiable statement of zero tolerance should be reinforced by specific measures to address different forms of violence, whether among staff or perpetrated by individuals external to the workplace against staff. Management and workers' representatives should take the lead, both in their personal behaviour and in taking action to eliminate the causes of violence.

Health workers' unions and professional associations joined forces with the WHO and ILO to produce a key tool in this area: *Framework Guidelines for addressing violence in the health sector*, 2002, with an accompanying training manual (International Labour Office, the International Council of Nurses, the World Health Organization and Public Services International).

Both these documents may be accessed at: http://www.who.int/violence_injury_prevention/violence/activities/workplace/en/ and http//www.ilo.org/health

The objectives of this module are:

- To review the range of violent acts that may occur at the workplace and show their impact.
- To identify risk factors.
- To offer guidance on measures to deal with them.

The long-term aim is to take a stand against workplace violence and create a work environment where staff and managers treat each other fairly, equally and with respect. A 'respectful workplace' is a productive, violence-free workplace with working relations underpinned by trust.
The approaches set out in Module 6 are also relevant here.

Adapting the module to your situation

This is an area where morality and accountability shape the solutions, not the level of resources. There may be national or sectoral laws or policies covering these issues, but implementation of effective protection and prevention is the responsibility of managers and staff at the workplace. Creating an organizational culture that does not tolerate violence or discrimination sends an important message to staff and to the public. It shows that the facility takes care of staff as part of its wider duty of care and insists on respectful behaviour by staff, patients, and visitors.

Checkpoints for Module 6

4.1	Take action to protect staff from violence
4.2	Take specific measures to tackle stigma and discrimination
4.3	Raise awareness and provide training about workplace violence
4.4	Create institutional commitment to a fair and respectful workplace

Checkpoint 4.1

Take action to protect staff from violence

WHY?

- Taking concrete action demonstrates that the health facility is committed to protecting staff from violence. This will create trust and confidence among staff and encourage their contribution to an organizational climate of mutual respect. You will find that a respectful and supportive work climate will reduce violent incidents over the long term.
- A systematic action plan ensures effectiveness by defining concrete actions, making staff responsible, and through a clear timeline.

HOW?

Treat workplace violence as you do other health and safety issues, and apply the same procedures:

- conduct a risk assessment;
- develop and implement prevention and control measures;
- raise awareness and stimulate support at all levels; and
- agree on a policy or policy statement.

Where possible, identify an appropriate unit or trusted person to act as the focal point for reporting complaints and coordinating responses.

1. **Recognize violent incidents and identify risks of violence.**

   Remember that violence may be low-key, ongoing, and hidden. With this in mind, take a good look at your workplace and try to identify threatening, bullying, and violent behaviour that may already be happening, as well as the risks of it occurring in the future. Are you sure that no staff absences or resignations are linked to violence, for example? Do you understand the reasons for high stress or low morale in a particular department? Do you encourage reporting of incidents and offer real support? If the answer is 'no', there may be issues you need to uncover.

- A thorough risk assessment is necessary for efficient targeted responses. In assessing risk, take into account the following:
  - the physical environment;
  - situations that increase stress and tensions, such as long waiting hours for patients, crowded work areas, noise, lack of information, etc.;
  - the vulnerability of workers (gender, age, sexual orientation, experience);
  - the presence of patients with a known history of violent or disruptive behaviour.

Situations of special risk: working alone, working with people in distress, working with objects of value (including drugs), working in places with easy public access, etc.
A number of risk factors have been associated with potential perpetrators, such as a violent history. Identifying a potential perpetrator of violence in the workplace, however, is not always easy and you should avoid making assumptions or stereotyping people in a way that stigmatizes them.
Some of the organizational 'danger signs' include secretive behaviour and lack of transparency; authoritarian and/or unaccountable management; lack of clear policies and planning; vague job descriptions; favouritism and nepotism; a fiercely competitive environment; lack of career development opportunities; understaffing; cliques; and negativity.

2. **Take action to prevent violence.**

- Introduce measures to respond to the risk assessment:

Organizational

- Make changes in the following areas if they are contributing to the build-up of stress and tension (see Modules 6 and 7), such as working time, work teams, working conditions, communications, staff facilities, management style (including worker-management collaboration).
- Design staffing patterns to prevent personnel from working alone and to minimize patient waiting time.
- Provide timely information to patients and family to reduce stress and prevent tensions.
- Restrict the movement of the public in health-care facilities.
- Develop a system for alerting security personnel if violence is threatened.

Environmental

- Introduce necessary measures to make the physical environment safe, such as good lighting at entrances and in hallways; security devices such as cameras, alarms, metal detectors, and emergency signalling; clearly marked emergency exits.
- Provide security escorts to the parking lots at night.
- Lock away drugs and medicines.
- Design public areas to minimize the risk of assault and waiting areas to accommodate and assist visitors and patients who may face delays.
- Arrange furniture and other objects to minimize their use as weapons.

Individual-focused

Provide all workers with training in resolving conflicts, managing assaults, and maintaining hazard protection (see Checkpoint 4.1). Encourage everybody to contribute through their individual behaviour to a respectful and positive work climate.

- Encourage reporting

Many health workers ignore abuse in the belief that this will avert trouble or because they accept it as part of the job. Some victims feel that they have to do what the bully says if they want to keep their jobs. Women may be especially reluctant to complain, even informally. There must never be disciplinary repercussions for a worker who complains (justifiably) about a colleague or superior.

- Initiate a complaints procedure

Violence and abuse in the workplace normally comprise a build-up of actions rather than a single event. For this reason it's important to be vigilant, to log all incidents, and ensure that an adequate complaints or grievance procedure is in place. This should be confidential, understood by all staff, and easily accessible. The provisions and conditions for compensation, if any, should be spelled out.

- Introduce or improve monitoring

Monitoring is important so that trends can become apparent and the impact of measures can be measured. Make sure that your figures report the sex of the victim(s) and perpetrator(s).

3. **Respond to incidents if they occur**

- *Support the victim:* provide medical attention if needed, together with counselling.
- *Alert the union or workers' representative*, who should be involved in the steps that follow.
- *Find out the facts:* get a full account from the victim –including previous incidents, if any; get witness accounts; speak to the perpetrator (at this stage to clarify facts only).
- *Assess the situation and action required:* this may not be straightforward and it is very helpful to have at least one staff member with training in conflict resolution.
- *Act appropriately:* a one-off or minor incident may be resolved through informal discussion, but even so you should ensure that the limits of acceptable behaviour are clearly defined and understood by both/all parties; in other cases it may be necessary to apply established grievance procedures. Make sure that the changes in behaviour required of perpetrator(s), and any other specific actions, are set out and understood, preferably in writing and/or with witnesses.

ZERO TOLERANCE FOR VIOLENCE AT WESTFRIES GASTHUIS HOSPITAL IN HOORN, THE NETHERLANDS

Situation: In 2001, 300 incidents of workplace violence were recorded at the hospital. The feeling of insecurity among staff was growing. A survey showed that most incidents occurred in the areas of reception/switchboard, accident and emergency, and psychiatry; during the weekend, evening, or at night.

Action: A 'Safe Care' plan of action was developed and presented at a launch meeting. An open forum discussion was held with the project leader and representatives of the police, the Public Prosecutor's Department and the hospital executive board. A working party composed of staff from the at-risk departments was then formed.

A baseline was defined: incident reports; analysis of measures already taken in order to prevent incidents, and results of surveys and interviews of staff in at-risk departments. The working party first drew up a risk inventory. Using colours, the least safe areas were mapped on the hospital floor plans. An alarm system was adopted.

In the event of verbal aggression, the doctor/nurse attempts to calm the patient/visitor. If this is not possible, assistance is sought by means of an alarm button. The incident is then recorded. In the event of serious threats, an alarm button is pressed immediately: security staff intervene, give the threatening individual a 'yellow card', record the incident and report it to the police.

In the event of physical violence, the alarm button is pressed immediately: security staff intervene, give the threatening individual a 'red card', record the incident and report it to the police. The perpetrator can also be banned from the hospital other than to receive emergency or psychiatric care, and is handed a letter to that effect.

Result: Physical violence at the *Westfries Gasthuis* hospital has fallen by 30 per cent since the measures were introduced. Verbal aggression has fallen by 27 per cent. After a successful pilot of several months, a decision was made to extend the programme to a total of 24 hospitals (European Agency for Safety and Health at Work, 2002.)

Note: The hospital's 'Safe care in your work' card is reproduced in the Trainers' Guide, Factsheet 4.2.

See Factsheet 4.3 in the Trainers' Guide for another action example: 'Reducing workplace violence in the USA'.

Checkpoint 4.2

Take specific measures to tackle stigma and discrimination

WHY?

- There are good reasons for having specific commitments in regards to discrimination, in addition to a general policy on violence. This is an area where workers particularly fear the actions of management if they feel themselves to be vulnerable, for example because they are HIV- positive. Discrimination in employment has wide-reaching consequences for equality of opportunity, for the livelihoods of families, and for social and economic security in general.
- It is therefore very helpful to have a positive statement which commits the employer to a policy of non-discrimination covering hiring, contractual arrangements, promotion, training, and termination. This helps build an atmosphere of trust and constructive industrial relations for the benefit of staff and patients alike.
- Be aware, though, that there are other forms of stigma and discrimination in the health sector. Patients commonly report suffering discrimination at the hands of health workers, especially patients with HIV. The health facility should take a strong stand against this violation of their duty of care. At the same time, health workers also report being stigmatized by the public because they are caring for patients with communicable diseases, especially HIV and TB (see Module 3).

REMINDER

Stigma describes reactions to or feelings about a group or individual on the basis of certain characteristics, be it their sex, colour, religion, health status, sexual orientation, or some other quality. Very often it results from a lack of understanding –including false information and misconceptions, fear of the unknown, or simply because of intolerance.

Discrimination describes the action people may take, especially those in positions of authority, as a result of this stigmatization: it can range from refusing to share an office with someone, to unfair dismissal. The ILO states: ''Discrimination in employment [...] entails treating people differently because of certain characteristics, such as race, colour or sex, which results in the impairment of equality of opportunity and treatment. [...] The elimination of discrimination at work is central to social justice, which lies at the heart of the ILO's mandate.'' (ILO Workplace discrimination, http://www.ilo.org/global/topics/equality-and-discrimination/workplace-discrimination/lang--en/index.htm)

Other examples of discrimination include isolation and rejection, gossiping and shaming, and generally unfair treatment (see page 1 of this module). Actions by health workers against patients may include: isolating patients or making them wait for care; performing general duties such as bed-making with gloves on or double gloving unnecessarily; refusing to touch patients with certain conditions and/or making them clean up after procedures.

Examples of discrimination: HIV and AIDS

Discriminatory language	Discriminatory behaviour	Discriminatory employment practices
■ AIDS victims ■ Suffering from HIV and AIDS ■ Moral judgements about affected individuals ■ Words that convey blame, disapproval, disgust ■ Using coded language or marking codes on files of patients with HIV	■ Isolating patients or making them wait until last for services ■ Double gloving for patient procedures ■ Performing general patient care activities such as bed-making with gloves ■ Refusing to touch patients with HIV or making them clean up after procedures ■ Walking away when co-workers with HIV come near ■ Not sharing cutlery or crockery with persons living with HIV	■ Denying staff with HIV promotion or educational opportunities ■ Denying benefits to staff with HIV ■ Enforcing pre-employment testing for HIV

"The wards don't have gloves, so how would you expect a nurse to go and attend to a HIV client? That's why you can find a patient lying in a pool of diarrhoea for many hours." –Nurse in Ethiopia

"We absolutely never inject [HIV] infected persons. We just give them medicines […] so we give [HIV] infected people no injections at all." –Health worker in Viet Nam

Adapted from: Toolkit on HIV Related Stigma Reduction in Health-Care Settings; Jointly developed by International Labour Organization (ILO), United Nations Joint Programme on HIV/AIDS (UNAIDS), United Nations Development Programme (UNDP), World Health Organization (WHO), EngenderHealth, Global Network of People Living with HIV (GNP+), International Center for Research on Women (ICRW), International HIV/AIDS Alliance (and its Zambia team), forthcoming publication.

HOW?

The answer is a combination of personal example, policy or workplace agreement, and education.

1. Review existing workplace policies and protocols and make sure there are clauses that prohibit discrimination.

   A policy, agreement or code of conduct should include provisions to protect the rights of health workers living with HIV from discrimination, victimization and harassment in the workplace, including sanctions for those who abuse them. They should also affirm the right of job applicants not to submit to any sort of compulsory testing, and take into account the responsibilities of some workers for the care of sick family members (see Module 7). Ensure that these are widely distributed among the staff, and train managers and supervisors to implement and monitor implementation. Increasingly, **collective bargaining agreements** are being used as a measure to provide legally binding protection. Make sure that the different types of discrimination are clearly identified and that it states that all are unacceptable and involve the union or workers' representative in the process. A policy, declaration or other expression of commitment by management is vital for the affirmation of action against stigma and discrimination (see Module 3 for policy principles related to HIV discrimination).

2. Be aware of relevant national legislation and international standards.

   In particular the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) and the Recommendation Concerning HIV and AIDS and the world of work, 2010 (No. 200) (details in Module 3).

The main points of these standards can be adapted and used in the workplace policy, code, or collective agreement. Provisions should:

- protect workers against discrimination, victimization, or harassment;
- safeguard employment where relevant (e.g. no dismissal on the grounds of HIV status, TB or other illness);
- ensure confidentiality and privacy; and
- clarify disciplinary measures to be taken in the event of persistent discrimination, mobbing, or harassment.

3. Assess the situation at your workplace with regard to stigma and discrimination.

   In the first instance consult the staff union or workers' representative - encourage systematic monitoring if it's not already in place. Talk to staff about their experiences concerning the attitudes and practices of colleagues, management, or patients. Bear in mind that this may be challenging due to the sensitive nature of the topic, so it is important to create an atmosphere of trust. Where reporting and complaint procedures are in place, you may also consult such data.

4. Managers and workers' representatives should set an example of correct behaviour and language use in the workplace, and all staff should be encouraged to speak out and challenge stigmatizing words and actions.

5. Information, education and training should be used to raise staff awareness on their rights and responsibilities and to encourage behaviour change (see Checkpoint 4.3).

See the Trainers' Guide for Factsheet 4.4, 'Taking action on discrimination'.

RIGHTS OF HIV-POSITIVE WORKERS AFFIRMED IN TWO CASES OF UNFAIR DISMISSAL IN BRAZIL

In two recent cases* (2011), the Brazilian Federal Superior Labour Tribunal has found in favour of HIV-positive workers, ruling that the workers had been unfairly dismissed and ordering that they be reinstated and compensated for lost wages and benefits.

The complainants in both cases argued that their dismissals were due to their HIV-positive status, that the employers' actions were discriminatory, and that they violated their fundamental rights under the Brazilian Constitution. Both complainants sought reinstatement and payment of retroactive salaries and benefits.

In the decisions, the Tribunal referred to two ILO international labour standards: the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) and the Recommendation concerning HIV and AIDS and the World of Work, 2010 (No. 200). The Tribunal referred in both cases to Paragraphs 10 and 11 of Recommendation No. 200, which provide that real or perceived HIV status should not be a ground of discrimination preventing recruitment or continued employment and that it should not be a cause for termination of employment. The Tribunal decision also emphasized that Recommendation No. 200 calls for ILO member States to promote the retention in work and recruitment of persons living with HIV.

Examining the issue of burden of proof in the two cases, the Tribunal determined that the respondent employer (not the complainant) had the duty of proving that the dismissal was not due to the complainant's HIV status (International Labour Organization, 2011).

** Adriana Ricardo da Rosa contra SOPAL - Sociedade de Ônibus Porto Alegrense Ltda. (Case No. TST-RR-104900-64.2002.5.04.0022, 3 August 2011) and Edson Osório Leites contra SOGAL – Sociedade de Ônibus Gaúcha Ltda (Case No. TST-RR-61600-92.2005.5.04.0201, 22 June 2011).*

Checkpoint 4.3

Raise awareness and provide training about workplace violence

WHY?

- Workplace violence is destructive by nature and has enormously negative consequences. Even the impact of verbal abuse should not be underestimated or minimized. It is essential to educate staff so that they understand the impact of violence.
- Staff who are trained to recognize the signs of violence as well as understand its negative effects will be able to contribute to prevention; they will be less likely to be violent themselves, more able to avoid situations of risk, as well as more likely to alert the responsible officer or team and help avert escalation.
- Staff who are trained to deal with threats and violent incidents can defend themselves and their co-workers more easily.

REMINDER

Assault/attack — behaviour intended to hurt or harm another person physically, including sexual assault.

Abuse — behaviour that humiliates, degrades, or otherwise indicates a lack of respect for the dignity and worth of an individual.

Bullying/mobbing — repeated vindictive, cruel, or malicious attempts to humiliate or undermine an individual or groups of employees.

Harassment — similar to abuse but may also include withholding information or resources in order to make it difficult for a worker to do their job. Behaviour may target particular characteristics of the victim, for example age, gender, race, religion, language, disability, sexual orientation, or HIV status.

Threat — promised use of physical force or power (i.e. psychological force) resulting in fear of physical, sexual, psychological harm or other negative consequences to the targeted individuals or groups.

4

HOW?

1. All staff should receive information to increase awareness about violence.

   Even messages on posters or in pamphlets can help in changing the organizational culture and empower individuals. Some institutions combine the management of workplace violence with general programmes of health and wellness. Participatory or inter-active education can help workers examine their own attitudes, prejudices and behaviour.

   Information and education should cover the following areas:

   - the deeply negative effects of violence and the unacceptability of it in the workplace;
   - the different types of violence, including psychological violence;
   - the definitions of stigma and discrimination, and characteristics that may give rise to them, such as race, gender or disability;
   - the situations and factors of risk, and the need for vigilance;

- the importance of reporting incidents;
- the support staff can expect in the event they become victims of violence, including medical attention, counselling or special sick leave, if needed; and
- the consequences for the perpetrator of violent actions.

EXAMPLES OF INTERACTIVE EDUCATION

Behaviour change communication (BCC)

This is a participatory approach to education which encourages people to understand their own attitudes to an issue – for example HIV – assess their risk, and build skills such as negotiating safe sex. Messages and approaches are tailored to the needs of a particular group with some common characteristic, this could be the workers at a hospital or, even better, a smaller group such as secretarial staff or a department.

Role play

A role play requires a small group to act out a situation, for example a discriminatory incident, or a mediation session. A brief is prepared for each 'character' and the group selects who will play the different roles. Observers record the action and report on what they saw. Those playing a role should come out of character and comment as themselves. It is very useful as a way of working out how to respond to issues as well as helping people see a situation from another point of view.

2. Training is used to build specific skills, from assertiveness and self-defence to negotiating and conflict resolution. It can be quite simple, focusing on the rights of individuals and encouraging self-confidence. Staff exposed to particular risks should receive additional training on how to respond and defend themselves.

3. The key role that power plays in workplace violence must be acknowledged. In the case of bullying, a significant number of incidents are top-down (supervisor to subordinate), so training should include targeted interventions in this area.

4. Managers, supervisors, shop stewards, educators, and counsellors should also be trained in how to recognize and prevent violence, how to de-escalate situations of conflict, and how to support victims,. Security staff should receive training in de-escalation, physical skills, and self-defence.

5. Clauses covering education and training provision should be included in the workplace policy or agreement.

REMINDER

The importance of 'Breaking the silence'

Staff awareness on unwanted and unacceptable behaviour is an important element of the prevention of workplace violence, stigma, and discrimination. Often victims and witnesses do not dare to speak up and suffer in silence. Interventions to break the silence are therefore of critical importance. Staff education and information sessions are important to raise awareness among staff and encourage victims to report incidents to a trusted person.

See example in Factsheet 4.3 in the Trainers' Guide.

TOOLKIT ON HIV-RELATED STIGMA REDUCTION IN HEALTH-CARE SETTINGS

Stigma and discrimination adversely affect the quality of health services provided to people living with HIV and other key populations. Stigma also affects health workers' own access to testing and treatment services, often resulting in delayed diagnosis and in some cases, death. In health facilities the three main drivers of stigma are:

Lack of awareness. Some health workers stigmatize without knowing it. They don't realize that their attitudes, words, and behaviours are stigmatizing, and what the consequences of this behaviour may be.

Fear of getting HIV through casual contact. Insufficient knowledge about HIV transmission, coupled with the absence of adequate resources and knowledge to implement standard precautions on a routine basis, can lead to unreasonable fears of getting HIV through everyday interactions with patients.

Moral judgments and values. Health workers may hold judgmental attitudes towards people living with HIV or towards key populations such as sex workers, migrants, men who have sex with men, prisoners, or people who use drugs. These attitudes act as barriers to accessing treatment and care.

The following quote from a health worker in Kenya illustrates the challenge:

> *"Health workers are expected to know, feel and act in certain ways […] Knowledge and skills, yes, that they have […] But what about preparing them to come to terms with their fears and anxieties about their own sexuality and mortality, their prejudices?"*

Adapted from: Toolkit on HIV Related Stigma Reduction in Health Care Settings; Jointly developed by International Labour Organization (ILO), United Nations Joint Programme on HIV/AIDS (UNAIDS), United Nations Development Programme (UNDP), World Health Organization (WHO). EngenderHealth, Global Network of People Living with HIV (GNP+), International Center for Research on Women (ICRW), International HIV/AIDS Alliance (and its Zambia team), forthcoming publication.

Checkpoint 4.4

Create institutional commitment to a fair and respectful workplace

WHY?

No matter where or how it occurs, workplace violence is costly and unproductive. It reduces motivation and performance, has a bad effect on relationships and staff collaboration, and creates a hostile work environment. The impact on the individual can range from shock, anger, fear, depression and stress, physical injury or disorders, or self-blame and avoidance behaviour –even substance abuse and post-traumatic stress disorder (PTSD).

Violence ultimately leads to long-term disruption of staff relations, reduced efficiency, increased absenteeism and increased staff turnover. Consequences for employers can include loss of reputation, legal liabilities, interrupted service delivery, and difficulty in recruiting and retaining qualified staff.

On the other hand, staff who feel supported and protected, and who are treated fairly and with respect, are more motivated and can perform better and more confidently.

REMINDER

In the case of physical violence against staff, the majority of the perpetrators of violence are patients, relatives, or the public, while in the case of psychological violence there is substantial staff-to-staff violence.

HOW?

It is important to make *an institutional commitment to take action*: this may be a simple written statement or a policy which sets out principles and explains the measures that will be taken to maintain a respectful workplace. It can take the form of a short, clear, and practical 'code of conduct to promote safety and mutual respect in [name of facility]'. In either case this sends a strong message about the working environment you want to create. The institutional commitment should be guided by relevant legislation, developed jointly by management and the union or staff representatives, and actively disseminated. See the introduction to the manual for guidance on the stages of policy development.

In particular, the statement of commitment or policy should:

- state that every worker is entitled to respect;
- make it clear that no form of workplace violence will be tolerated;
- clearly define different types of behaviour that are considered as unacceptable.

The institutional commitment should address both violence and discrimination; either as part of the same document, or as separate policy statements.

Measures that protect health workers, as well as patients, should be specifically added to the segment of the policy statement tackling discrimination. These include:

- a management pledge to provide equal opportunity in hiring, contractual arrangements, promotion, training and termination;
- management protection of staff experiencing discrimination due to the nature of their work (e.g. caring for HIV and TB patients) health status, or any other reason;
- ensuring that health workers do not discriminate against their patients, as this represents a violation of their duty of care.

In addition, an accompanying protocol should explain the procedure for reporting incidents (see Module 1); make clear what help the victims can expect; and spell out the consequences for perpetrators of violence, discrimination or harassment, as well as the grievance procedures.

The policy should be explained and discussed as part of the awareness-raising and training related to workplace violence (see Checkpoint 4.3).

Have a specified coordinator(s), mediator(s), or counsellor(s) appointed jointly by management and the staff union, to whom incidents should be reported, and who can take charge of education and training.

REMINDER: THE IMPORTANCE OF REPORTING

The Lincolnshire Ambulance Service Trust in the UK has detailed procedures in the event of a violent incident, covering reporting, staff support, and the prosecution of assailants.

The importance of reporting is reinforced regularly through the quarterly health and safety bulletin. The Trust explains that reporting ensures that:

- the incident can be investigated,
- safety measures can be reviewed and improved to protect staff in the future,
- there is a secure basis for legal redress or prosecution.

The Trust has also put in place a register of incidents for review and analysis by the health and safety committee.

Framework Guidelines for addressing workplace violence in the health sector - Training Manual, Chapter 6 (ILO et al., 2005).

MANAGING WORKPLACE VIOLENCE

Situation: A hospital in Thailand was experiencing an increased rate of physical assaults from patients and families against hospital workers.

Action: To resolve this escalating trend, the management formed a conflict prevention and resolution team. This decision required staff time, but did not require additional resources. The team makes rounds in different parts of the hospital to detect situations that could escalate into violence. If there is a dispute or conflict, they invite the family members or visitors (including patients) to a room set aside for this purpose to discuss the matter calmly away from crowds and noise. The conflict resolution staff try to understand the issue and facilitate resolution so that the situation does not become violent.

Cost and sustainability: Staff time was involved but no additional cost.

Result: Since the establishment of this team, the incidence of violence in the hospital has decreased

Personal communication from Somkiat Siriruttanapruk, Bureau of Occupational and Environmental Diseases, Ministry of Health, Thailand, June 2010.

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Module 5:

Towards a green and healthy workplace

What is a 'green' hospital or health-care facility? In this module, the word 'green' is used to describe actions that make health services more environmentally-friendly, safer and healthier for staff and patients, as well as more energy-efficient and less wasteful. Experience shows that the 'greening' of health facilities can enhance patient care, save money, promote productivity, and reduce environmental damage.

By examining every aspect of the physical environment, supplies, systems, and working practices we can identify opportunities for beneficial environmental and health change. Many hospitals have successfully improved aspects of lighting, air quality, waste management, water savings, energy efficiency, procurement practices, and the use of safer chemicals. These changes can be implemented progressively, as time and resources permit.

The main issues at stake are:

- energy access, efficiency and renewable energy generation;
- building design, location and transport;
- procurement;
- water and waste;
- patient and worker safety.

While some of these issues are the responsibility of individual health facilities, actions such as building design, transport, aspects of energy generation and –in some cases– procurement need to be addressed at a different level, through the local or national health system in collaboration with other sectors of the economy.

Twelve **green hospitals** across India report 20 to 40 per cent energy savings, 35 to 40 per cent water savings, better indoor air quality, improved natural lighting and faster patient recovery. The Kohinoor Hospital in Mumbai shares the benefits in more than one way: ''When we save on water and electricity costs, these benefits get passed on to the patient who, consequently, pays less for treatment,'' says Dr Rajeev Boudhankar, vice-president of the hospital.

Economic Times, 21 June 2012.

The **objectives** of this module are to:

- Introduce the idea of a green health-care facility.
- Identify the opportunities for environmental improvements and savings.
- Guide the development of a green strategy for the workplace.

It focuses on the following key areas: green procurement, environmental and health hazards, water conservation, waste management, and energy efficiency. It should be used together with Module 8 and Module 1 in particular. Separate checkpoints cover energy, waste, water, and set out where workplaces can make quite modest but effective improvements.

Adapting the module to your situation

This module encourages you to consider the green implications of all the changes you are making, one at a time, but it does not advise setting up a major separate programme. Often it's simply about good basic practice in patient care and working conditions: if, by being aware of green practices in this area, you're able to make improvements in a way that saves energy and improves the physical environment, then everyone benefits. It won't take long to read through the five checkpoints and see where you can start with manageable but beneficial adjustments to your building, work practices, or systems.

Checkpoints for Module 5

5.1	Identify, assess and reduce environmental health hazards
5.2	Put in place measures to conserve water
5.3	Reduce waste and improve waste management
5.4	Assess energy efficiency and put in place measures to improve it
5.5	Establish a green strategy at all organizational levels

See Factsheet 5.1 in the Trainers' Guide for the Global Green and Healthy Hospitals Agenda, 'Ten Goals For Green Hospitals' *(Global Green and Healthy Hospitals Network, 2011).*

Checkpoint 5.1

Identify, assess and reduce environmental health hazards

WHY?

- Module 1 discusses a wide range of risks and hazards, and sets out a generic approach for tackling them. This section complements it, and looks in more detail at the hazards with the greatest environmental impact. The basic principles and practices of occupational safety and health including the hierarchy of control measures also apply here, in order to prioritize elimination of the hazard at the source.
- Everyone expects a hospital or clinic to be clean. However, many traditional cleaning products, floor strippers, and disinfectants present human health and environmental concerns. They may contain chemicals that cause cancer, reproductive disorders, respiratory ailments, eye and skin irritations, central nervous system impairments, and other negative effects. They can also reduce air and water quality, not only within the facility but in the wider community (e.g. chemical waste into the water supply).

See Factsheet 5.2 in the Trainers' Guide for a list of chemicals used in health facilities.

HOW?

1. ***Carefully monitor the use of chemical products***, especially disinfectants and sterilants such as ethylene oxide (EtO) and glutaraldehyde; and products containing Poly Vinyl Chloride (PVC), and the plasticizing chemical that makes PVC soft, DiEthyl Hexyl Phthalate (DEHP). The specialist staff working in all departments, from cleaning to labs, will be able to help identify the products that are most hazardous and assess the degree of risk. Ensure that all chemicals are stored in labelled containers. Access up to date information on the side effects of chemicals and the alternatives that are available.

2. ***Seek safer alternatives and substitutes*** (see list that follows).

3. ***Eliminate hazardous handling practices*** such as, transferring hazardous drugs from one container to another, reconstituting, or manipulating them; withdrawal of needles from drug vials; expulsion of air from drug-filled syringes. Hazardous drugs, such as antineoplastic cytotoxic medications, anaesthetic agents, anti-viral agents and others, can cause serious health effects including cancer, organ toxicity, fertility problems, genetic damage, and birth defects (US Department of Labor, Occupational Safety & Health Administration (OSHA), undated). They should only be prepared by pharmacists and other professionals using proper personal protective equipment and engineering controls.

   Avoid aerosolization of cleaning chemicals by pouring them onto surfaces for cleaning instead of spraying. Prohibit smoking, drinking, applying cosmetics, and eating where hazardous drugs are prepared, stored, or used.

4. ***Use appropriate personal protective equipment*** (PPE), such as gowns, latex or nitrile gloves, and chemical splash goggles or equivalent safety glasses (see Module 3 for full details).

5. ***Store safely, label clearly, and lock away hazardous drugs or chemicals***. Use recommended biological safety cabinets when available.

   Module 8 on storage and stocking, Module 1 on occupational safety and health, and Module 3 on biological hazards all contain relevant recommendations on preventing and controlling exposure to chemical hazards and infections.

Safer alternatives and substitutes to a range of drugs and products

Sterilants and disinfectants

Widely used products in health-care facilities are ethylene oxide (for sterilizing moisture and heat-sensitive instruments) and glutaraldehyde (a high-level disinfectant for heat-sensitive equipment, a tissue fixative in laboratories, and a hardening agent in the development of X-rays). Both have been found to cause problems for workers exposed to them, as well as immune-compromised patients.

Safer and less toxic alternatives include:

- Non-chemical methods: high heat and pressure (autoclaves) for equipment that is not pressure sensitive.
- Hydrogen peroxide: high level disinfection in a concentration of 3–25 percent for 30 minutes at 20 degrees Celsius.
- Peracetic acid: a concentration of 0.2 per cent for 10-15 minutes is active against all microorganisms including bacterial spores.
- Peracetic acid-hydrogen peroxide mixtures: high-level disinfectant/sterilant (incompatible with some flexible gastrointestinal endoscopes).
- Hypochlorite: high-level disinfection in 10 minutes at 25 degrees Celsius.

REMINDER

Boiling in water is not sufficient for sterilization –some particularly hardy spores can survive exposure to the temperature at which water boils under normal atmospheric pressure.

See the *Sterilization manual for health centers* (PAHO, 2009) for more detailed information on sterilants and disinfectants.

Floor care products

Floor strippers contain chemicals that can seriously harm the user and may also affect the building occupants, causing headaches, eye irritation, dizziness, nausea and respiratory disorders. Chemicals in these products can include diethylene glycol ethyl ether, aliphatic petroleum distillates and nonyl-phenol ethoxylate, ethanolamine (sensitizer), butoxyethanol, and sodium hydroxide (lye). Some soaps and detergents may cause allergic reactions and dermatitis.

Reduce or eliminate risk by taking the following measures:

- Ensure that all floor-care products are free of zinc, heavy metals, phthalates, glycol ethers and ammonia.
- Consider eliminating the application of wax that is not necessary for cleaning and will therefore eliminate the use of toxic floor wax strippers.
- Floor strippers, if used, and maintenance products should exhibit a VOC (volatile organic compound) limit of less than 0.1 per cent.
- Clearly label all cleaning products that contain hazardous chemicals such as those found in some soaps, disinfectants, and pesticides.
- Provide appropriate personal protective equipment for staff handling dishwashing detergents and cleaning chemicals.

Mercury

Mercury, a potent neurotoxin, can be found in various pieces of medical equipment, such as thermometers, blood pressure measuring devices (called sphygmomanometers), batteries, and some light bulbs. Exposure to accidental spills, such as when a mercury fever thermometers breaks, may occur through inhalation or by absorption through the skin. Short exposure to high levels of mercury can cause severe respiratory irritation, digestive disturbances, and marked renal damage. Chronic exposure may result in weakness, fatigue, weight loss, and disturbance of gastrointestinal function. These are risks for patients, health-care providers, and the public when mercury waste is improperly disposed. Accurate alternatives are available, for example digital or electronic thermometers, aneroid blood pressure monitors, and rechargeable batteries.

See Factsheet 5.4 in the Trainers' Guide for alternatives to mercury use in medical equipment.

Mercury spills can be cleaned up from linoleum, ceramic and other smooth surfaces. If a spill occurs on rugs, curtains, upholstery or similar surfaces, the contaminated items must be thrown out.

In the event of spills:

- Turn off ventilation system, shut the door, and evacuate the room.
- Remove jewellery/watches from hands and wrists; wear rubber, latex or nitrile gloves; use a respiratory mask or face mask if available.
- Carefully pick up broken glass or sharp objects with tongs or forceps, place them in an unbreakable plastic jar or bottle with a tight lid, close and label it.

- Locate all mercury beads, use a dropper or syringe to collect them up and sticky tape to pick up smaller, hard-to-see beads.
- Place the spill and all materials used, including the gloves, in a trash bag. Close and label it, and discard safely (see Checkpoint 5.3 on waste management).

CAUTION: Never use a vacuum cleaner to clean up mercury.

Good news –but we still need to take individual action

World Health Organization Statement, 19 January 2013.

WHO welcomes international treaty on mercury
The world's governments have finalized text for a global legally-binding treaty on mercury, the bio-accumulative heavy metal that is poisoning the world's fish supply, threatening public health, and impacting the environment. Among other measures, the treaty text mandates an end to the manufacture, import and export of mercury thermometers and blood pressure devices by 2020.

Meanwhile health facilities can support the WHO-HCWH (Health Care Without Harm) Global Mercury-Free Health-Care Initiative by substituting all mercury thermometers and blood pressure devices with safe, accurate, and affordable alternatives (WHO, 2013b).

Checkpoint 5.2

Put in place measures to conserve water

WHY?

Water is an increasingly scarce and precious resource. Globally, water scarcity affects four out of every ten people; see the *10 facts on climate change and health* (WHO, 2012). The direct costs of accessing it –whether from state or private suppliers– are also rising steadily in most regions.
There are many easy and low-cost savings to be made by reviewing your facility's water efficiency.

HOW?

1. Make sure that your health facility provides clean water for patients and health workers, ***conserves water and manages water safely***.

2. ***Measure where and how water is used***, then examine each use for potential savings.

- Make an audit of the main water uses at your workplace. Hospitals in the USA typically find that a quarter of water use is domestic, (i.e. sinks, showers, toilets) so it makes sense to start there. Kitchens also consume a significant amount and offer many savings opportunities.
- Organize and prioritize your response. In particular, identify the easiest and least costly measures, but also the most urgently required, and those offering the biggest savings.
- Look for examples of good practice nearby and see the reference section for useful websites. Check national regulations, if any, together with international guidelines.
- Start with the easiest actions, for example:
  - Locate and correct drips, leaks, and unnecessary flows in bathrooms, laundry facilities, kitchen, labs, etc.
  - Repair/adjust flush mechanisms on toilets so that they work as designed.
  - Don't use drinking water where it's not needed (e.g. irrigation, toilets)
  - Irrigate grounds and wash vehicles less often; use recycled water where possible; landscape with drought-resistant plants.
  - Consider harvesting rainwater and/or recycling water.
  - Eliminate bottled water if drinking water is available (the Pacific Institute in California estimates that the energy required to produce bottled water in the USA is 2000 times that of producing tap water).
  - Make sure that dish washers and laundry machines are run with full loads, reduce rinse cycles if possible, procure machines with water-saving functions when replacements are needed.
  - As other appliances wear out, replace with more water-efficient models. For example, switch from film-based radiological imaging equipment, which uses large quantities of water, to digital imaging.

See Factsheet 5.5 in the Trainers' Guide for water savings suggestions.

3. ***Raise the awareness of staff, patients and visitors***:

- Combine the audit with an awareness-raising exercise for staff: as the audit covers all departments, involve staff in each department in the process of collecting information, and explain to all staff why this is important. Reinforce messages about water use through signs and notices, and in staff training –especially during the induction of new staff.
- Increase patient and visitor awareness of water conservation (e.g. signs in patient rooms and restrooms, publicize water conservation policy).

Checkpoint 5.3

Reduce waste and improve waste management

WHY?

- WHO Core Principles describe safe and sustainable health-care waste management as a public health imperative, and call on those responsible to support and finance it adequately (WHO, 2007). The world's governments, through the World Health Assembly, have called for greater action on medical waste (World Health Assembly Resolution 63.25, 2010).
- The combined toxic and infectious properties of medical waste are an underestimated environmental and public health threat. Less than 20 per cent of medical waste is hazardous in itself, but when hazardous and non-hazardous wastes are mixed together, all the waste becomes hazardous so that contamination spreads and hospitals end up paying additional charges for its management, treatment and disposal (WHO, 2013a).
- Health-care waste constitutes a significant occupational hazard for health workers and others dealing with it. For example, if hazardous waste is not properly disposed and labelled, health-care waste handlers are at greatest risk from infectious hazards. Moreover, all medical staff, patients and individuals coming into close proximity with hazardous health-care waste are potentially at risk. By properly sorting and reducing waste, hospitals not only avoid disposal costs and environmental hazards, but they are often able to recycle a large proportion of their nonmedical waste, reducing the raw materials, energy, and processing needed to replace the products they use.

HOW?

1. Take the time to ***identify and assess waste issues and hazards*** and then plan appropriate action. You will need to consider different **types** of waste (e.g. chemicals, gases, water wastes, kitchen waste, etc.) and different **categories** depending on the degree of risk attached (e.g. hazardous, infectious, radioactive, general waste). Hospital wastewaters are often excluded from the list of medical wastes, but may contain drug-resistant pathogens, chemicals and other hazardous materials.
2. ***Implement a comprehensive waste reduction programme***, including:
   - waste management training for all staff;
   - ensuring that waste handlers have specific training, vaccinations, and personal protective equipment;
   - careful segregation and separate collection of waste;
   - reduction of waste –as well as greenhouse gas emissions– through composting, recycling, better purchasing (see Checkpoint 5.5), and minimizing waste transport (local treatment and disposal);
   - phasing out of incineration of medical waste: a variety of non-burn technologies are available to safely disinfect, neutralize or contain waste for landfill disposal, (e.g. autoclaving).
3. ***Segregate waste at source and initiate recycling for non-hazardous wastes***. Careful segregation and separate collection of hospital waste is the key to safe, sound management of health-care waste. It can substantially reduce the quantity of health-care waste that requires specialized treatment.

> "Medical waste management is in large part dependent on changing the habits of hospital staff."
>
> *Global Green and Healthy Hospitals Network, 2011.*

4. ***Consult with the local authorities*** over issues of joint interest, and advocate for secure landfills to manage non-recyclable waste.

Detailed information can be found in the WHO manual, *Safe Management of Wastes from Health-Care Activities*, 2nd edition, 2013.

Dealing with hazardous waste

Hazardous health-care wastes include:

- infectious waste;
- small quantities of discarded solid, liquid, and gaseous chemicals and pharmaceuticals, and non-recyclable pressurized containers;
- mercury-containing medical devices and waste mercury;
- anaesthetic gases.

All blood and body fluids should be treated as potentially infectious waste.

Highly hazardous health-care wastes, which should be given special attention, include:

- highly infectious non-sharp waste such as laboratory supplies;
- highly infectious physiological fluids, pathological and anatomical waste, stools from cholera patients, and sputum and blood of patients with highly infectious diseases such as TB and HIV and AIDS;
- large quantities of expired or unused pharmaceuticals and hazardous chemicals;
- all radioactive and genotoxic wastes.

Note: Infected sharps are a subcategory of infectious waste but are dealt with separately (see below and in Module 3).

Infectious waste management

- The small portion of medical waste that is potentially infectious has a high proportion of plastics and can be landfilled after disinfection, rather than incinerated, since burning plastic produces persistent organic toxic pollutants (known as POPs).
- Infectious waste should go into yellow leak-proof plastic bags or containers. For hazardous waste and highly hazardous waste the use of double packaging is recommended; e.g. a plastic bag inside a container.
- Bags and containers for infectious waste should be marked with the international infectious substance symbol (see figure 5.1).
- Stools of cholera patients should be collected in buckets because of the need for disinfection, and disposed of only after disinfection by burial or incineration. Discharge to sewers or to the environment may contribute to the spread of the disease (Prüss et al., 1999).

REMINDER

Chemical waste may be **hazardous** or non-hazardous. It is considered to be hazardous if it has at least one of the following properties: *toxic; *corrosive (e.g. acids of pH < 2 and bases of pH > 12); * flammable; *reactive (explosive, water-reactive, shock-sensitive); *genotoxic (e.g. cytostatic drugs).

Non-hazardous chemicals have none of the above properties (e.g. sugars, amino acids, and certain organic and inorganic salts).

Chemical waste and pharmaceutical waste management

- Small amounts of chemical or pharmaceutical waste may be collected together with infectious waste.
- Large quantities of chemical waste should be packed in chemical-resistant containers.
- The identity of the chemicals should be clearly marked on the containers; hazardous chemical wastes of different types should never be mixed.

Radioactive waste management

Low-level radioactive waste produced by health-care and research activities may be collected in containers clearly labelled with the international radioactive symbol and the words "radioactive waste." Radioactive waste should be stored in containers that prevent dispersion of radiation, and stored behind lead shielding.

Figure 5.1
Radioactive waste container

For low-level radioactive waste there are three possible ways of disposal:

- "decay in storage", which is the safe storage of waste until its radiation levels are indistinguishable from background radiation;
- return to supplier;
- long-term storage at an authorized radioactive waste disposal site.

Generally, the handling of radioactive waste has to comply with nuclear regulatory agency recommendations in your country, which define clearance levels and waste classifications according to activity levels and the half-lives of the radionuclides.

Anaesthesia gases waste

These are the anaesthetic gas and vapours that leak out into the surrounding room during medical and surgical procedures. They include nitrous oxide and halogenated agents (vapours) such as isoflurane and halothane. Take action to:

- provide appropriate ventilation in the surgical suite;
- use a properly designed and operating dilution ventilation system;
- turn off vaporizers of anaesthesia machines when not in use;
- provide proper face masks, ensure sufficiently inflated endotracheal tubes, and prevent anaesthetic spills;
- check all anaesthesia equipment (connectors, tubing, etc.) before use each day;
- clean up spills of liquid anaesthetic agents promptly;
- investigate ways of recycling gases.

Figure 5.2
International hazard symbols


= warning (caution, danger)


= infectious substance


= poison


= radiation


= new radiation symbol (2007)

Segregating and containing waste

Many countries have national legislation that determines the waste segregation categories and a system of colour coding for waste containers. Where there is no national legislation, a World Health Organization (WHO) scheme is available.

WHO recommended waste segregation scheme		
Type of waste	**Colour of container and markings**	**Type of container**
Highly infectious waste	Yellow, marked "HIGHLY INFECTIOUS", with biohazard symbol	Strong, leak-proof plastic bag, or container capable of being autoclaved
Other infectious waste, pathological and anatomical waste	Yellow with biohazard symbol	Leak-proof plastic bag or container
Sharps	Yellow, marked "SHARPS", with biohazard symbol	Puncture-proof container
Chemical and pharmaceutical waste	Brown, labelled with appropriate hazard symbol	Plastic bag or rigid container
Radioactive waste	Labelled with radiation symbol	Lead box
General health-care waste	Black	Plastic bag

WHO manual, Safe Management of Wastes from Health-Care Activities, 2nd edition, 2013.

In any area that produces hazardous waste –hospital wards, treatment rooms, operating theatres, laboratories –three bins are required for effective segregation of health-care waste. The **three-bin system** provides one bin for potentially infectious waste, a separate one for used sharps, and one for general non-hazardous waste. You can add other bins for other categories of waste, such as chemical and pharmaceutical wastes.

Figure 5.3
The three-bin system

Note: Many facilities cannot afford disposable plastic bags or containers. In such circumstances, hazardous waste may also be collected in paper bags, inside a container that will not be removed. Plastic or metal containers for hazardous waste should be disinfected, for example with sodium hypochlorite (bleach) before reuse. See Module 3 for ways of improvising sharps boxes.

Waste re-use

Medical and other equipment used in a health-care establishment may be reused provided that it is designed for the purpose and can withstand the sterilization process. Reusable items may include certain sharps, such as surgical instruments, scalpels, glass bottles and containers, etc. After use, these should be:

- collected separately from non-reusable items;
- carefully washed; and
- sterilized through thermal or chemical sterilization.

Note: Only single-use disposal needles and syringes should be used for injections and disposed immediately after use into a sharps container.

Waste recycling

Most hospital waste is similar to that found in an office or hotel –paper, cardboard, metal, and food waste. Much of it can be diverted from landfills through waste recycling programmes. Recycling is a process that extracts useful materials from waste to produce new products. It contributes to reducing waste of materials, energy usage, and air and water pollution by reducing the need for conventional waste disposal.
Check if there are national waste recycling regulations. Explore which programmes are available in the communities near your health facility, which materials are recycled and how they should be sorted: usually, paper, glass, metals and plastic are collected separately as they need different recycling processes. Some waste, such as batteries, need specialized procedures for recycling to avoid harm for the environment.

Recyclable waste:

- Paper: White office paper, mixed office paper, corrugated cardboard, newspaper, magazines, boxboard, junk mail, books.
- Glass, such as bottles;
- Metal: steel or tin cans, such as food cans; aluminium cans, such as soda cans.

See Factsheet 5.6 in the Trainers' Guide for a list of categories of waste and containers needed for safe waste management.

Checkpoint 5.4

Assess energy efficiency and put in place measures to improve it

WHY?

- Energy costs money, depletes the planet's resources (except where renewable) and in many forms contributes to greenhouse gas/carbon emissions. Even small changes towards saving energy can lead to short- and long-term benefits.
- According to the US Environmental Protection Agency traditional forms of energy may well carry significant health costs and risks; by comparison, energy efficiency and clean energy have advantages with respect to health, reliability, community benefits, and social responsibility.

Breakdown of energy consumption in a typical hospital of the United Kingdom

At the time of measurement, air heating used a third of all energy, followed by space heating, fans, hot water, catering, and lighting at 10–12 per cent each. Office/small power, refrigeration, sterilization and humidification added up to less than 10 per cent.

Carbon Trust, 2010.

HOW?

1. ***Assess the various ways and places energy is used in your facility***. It would be preferable to press the health authorities to lead or support this procedure, but there are online tools to help you audit energy use and to help you make savings.

See for example:

- Practice Greenhealth at http://practicegreenhealth.org/topics/energy-water-and-climate/energy/tracking-and-measuring-energy-use
- Health Care Without Harm is especially useful as it has a global perspective and region-specific information, http://www.noharm.org/

2. Together with the staff in each department, ***plan an energy-saving programme***. Prioritize the measures which are the least costly to introduce and/or those which would bring the biggest savings. Suggestions include the following:

- *Heating*: Turn thermostats down a few degrees in winter–even a slight shift can create significant energy savings.
- *Cooling, ventilation*: Audits have found a number of air conditioning (and heating) systems are oversized in relation to need. Similarly many fans are bigger than they need to be, requiring more energy; so when they need replacing, get a smaller fan if appropriate. Open windows and make use of natural air flow.
- *Lighting*:
  - install energy-efficient lighting, use low energy/long life bulbs; replace incandescent with fluorescent lamps and LEDs; install dimmer switches;
  - start a 'Switch off the light!' campaign and/or add occupancy sensor switches in spaces that are frequently unoccupied;
  - use natural light wherever possible;
  - install solar lighting in hospital car parks.
- *Vehicles*: Improve the energy efficiency of hospital fleet vehicles, and encourage staff, patients and visitors to walk or use car pools, public transport, or bicycles whenever possible (install bicycle storage facilities to support this). Negotiate discounts for public transport to provide incentives for its use.
- *General load*:
  - Install clean and renewable energy sources, such as solar panels, wind turbines and biofuels. These can be used for lighting, heat generation, and pumping and heating water.
  - Examine equipment and ensure use is energy-efficient (e.g. full washing machine loads,

full ovens). Regularly defrost freezers and refrigerators.

- Ensure that equipment and systems are not oversized in relation to need.
- Reduce 'standby' energy use, switch off machines.
- *Insulation*:
  - Improve boiler insulation.
  - Assess points of greatest heat loss (often roofs, especially flat ones) and add/upgrade insulation, add draught-proofing.
    Note: roofs can trap heat and undermine cooling as well as cause heat loss.

See Factsheet 5.7 in the Trainers' Guide for 'Energy efficiency – an action example from India'.

Checkpoint 5.5

Establish a green strategy at all organizational levels

WHY?

- Hospitals consume a great amount of energy and water and generate large quantities of waste, some of it hazardous. Both consumption and waste have a negative impact on the environment and represent a substantial recurrent cost. It is easier and less costly to initiate action in a well-planned and incremental way than to be obliged to react in haste when natural resources become even scarcer and more costly, and/or when the law requires it.
- This manual insists on the importance of an institutional commitment as the basis for effective action. This can be a statement of commitment, a protocol, or a policy. Its precise form is less important than that it being part of an action-oriented strategy.

HOW?

1. ***A concise and clear policy statement or protocol*** provides a solid base for your green initiatives and is the best way to raise awareness as well as structure action. The policy should be developed jointly by management and workers' representatives, and make clear the rights and responsibilities of all parties. It should be based on national legislation (if any) and take into account the establishment's regulations and international guidelines.

   See the section on drafting, agreeing, and implementing a workplace policy or agreement in the introductory chapter.

2. ***Auditing and monitoring for waste, environmental impact and opportunities for savings.*** Be aware of your facility's environmental impact in order to plan ways of reducing it. This is the core of your action plan: examine the physical environment, review systems and processes, and see where improvements and savings can be made. These could be as simple as fixing a dripping tap, turning off the lights when not needed, opening windows, or adding insulation.

3. ***Green procurement*** is a relatively new approach for organizations wishing to improve their environmental performance. Efforts are made to purchase equipment and supplies from local sources, and give priority to those that are environmentally friendly (minimal packaging, reusable and recyclable products, avoiding hazardous chemicals and non-degradable plastics such as PVC).

   Health-care facilities that provide food to patients can reduce their environmental impact *and* improve patient health by making changes in hospital service menus and practices, including limiting the amount of meat in hospital meals, producing their own food onsite, composting food waste, and buying local and organic produce.

   Implementing green procurement not only creates benefits for the environment –such as reduced pollution and waste or energy savings– but can also lead to financial savings for your facility. It usually does not require any organizational changes by the contracting authority, but does involve access to environmental information, priority-setting and some employee training on effective procurement.

Examples of green procurement by European hospitals

- A hospital in Vienna started buying organic food for the canteens, focusing on products easily available from organic agriculture without procurement constraints. These products included cereals, dairy products, fruit, fresh vegetables, and meat.
- The Vienna Hospital association has implemented a green procurement policy for disinfectants with a database to assist in their selection (WIDES Database): http://www.wien.gv.at/english/environment/protection/oekokauf/disinfectants/
- Swindon Hospital in the UK has switched to using energy-efficient light bulbs, non-PVC products, and other green supplies.

Adapted from: EMAS and Information Technology in Hospitals (LIFE 04 ENV/GR/000114) Guidelines for the implementation of Green Procurement in Hospitals.

See also the Kaiser Permanente Institute for Health Policy, InFocus No. 8, Spring 2012, on Sustainable & Healthy Food Procurement (Kaiser Permanente Institute for Health Policy, 2012).

4. ***Assign responsibility***. If resources permit, health-care facilities should have a 'green' coordinator on their Occupational Safety and Health (OSH) or HealthWISE team. A larger facility might consider setting up a dedicated ''green'' team or subcommittee to oversee action on environmental issues (Government of Ontario, Ministry of the Environment, 2011).

   The responsibilities of the coordinator or team might include:

- helping to assess the environmental effects of existing policy and practice, identify opportunities to improve work practices in environmentally-friendly ways, and integrate initiatives;
- raising green awareness among workers, their unions and professional associations;
- providing education and training for staff and community on:
  - environmental factors that contribute to the burden of disease;
  - the relationship between public environmental health and disease prevention;
  - how to evaluate and select environmentally preferable products; and
  - green practices and sustainability.

5. ***Build or participate in local networks*** of hospitals and/or health services groups committed to exchange information, and advocate for environmental health policies. Together, educate accreditation and training bodies about the links between environmental sustainability, human health, and health-care standards. Identify ways that sustainability practices can be incorporated into accreditation standards and training curricula.

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Further Reading

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  Available at: https://practicegreenhealth.org/topics/epp
- The Global Green and Healthy Hospitals Network (www.greenhospitals.net) is a project of Health Care Without Harm, an international coalition of more than 470 organizations in 52 countries.
  Available at: http://www.noharm.org/
  Note: Practice Greenhealth was formerly known as Hospitals for a Healthy Environment (H2E)
- *'Solar suitcase' saving moms, babies during childbirth*, Christie O'Reilly, CNN, 28 February 2013.
  Available at: http://edition.cnn.com/2013/02/28/health/cnnheroes-stachel-solar-power
- *NHS-England Procurement for Carbon Reduction Toolkit. 2010.* The P4CR toolkit aims to provide procurement professionals, as well as other staff, with guidance, methodologies and tools to identify and understand the carbon reduction opportunities for their organisation. Procuring for Carbon Reduction (P4CR) will help you reduce carbon emissions when buying goods and services.
  Available at: http://www.sdu.nhs.uk/corporate-requirements/interventions/procurement.aspx
- WHO. Health in the Green Economy – Health-care facilities
  Available at: http://www.who.int/hia/hgebrief_health.pdf

Module 6:

The key role of staff: recruitment, support, management and retention

Health-care services are delivered by people to people, so the sector's workers are at the very heart of healthcare –as well as the key to quality service delivery. However, in many countries health services lack personnel to care for the health needs of their communities, particularly in rural, remote, or hardship areas. In 2006, WHO estimated a shortage of more than 4.3 million health workers across the world, with 57 countries experiencing critical shortages (WHO, 2006). A 2013 WHO report found that 100 countries have less than 34,5 skilled health workers per 10'000 population. This ratio is needed to achieve universal health coverage (UHC) according to ILO estimates. (WHO, Global Health Workforce Alliance, 2013; Scheil - Adlung, 2013). Therefore, retaining health workers by ensuring a constructive employment relationship together with a supportive and safe work environment is a priority (WHO; Global Health Workforce Alliance, 2008).

A literature review related to health workforce wastage in Africa found that poor personnel management, inefficient and inappropriate deployment of staff, a mismatch between skills and needs, and poor health and safety were among the main reasons for such wastage (Dovlo, 2005).

The **objectives** of this module are:

- To explain the impact that good planning, supportive supervision, and consultative management have on staff recruitment, retention, and performance.
- To give examples of practical approaches for improvement.

This module is mainly directed at managers, including the personnel (or human resources) department, but as with all organizational change, the measures introduced will be more successful when they are developed in consultation with staff and their representatives. Unions may also find the module useful in order to identify issues for consultation and negotiation.

The primary aim of staff planning is to ensure that quality service delivery is not interrupted. Good human resource management starts with transparent recruitment practices, clear job descriptions and fair contracts, and appropriate training. It also depends on supervisory practices that value, support, and encourage workers.

The staff perspective needs to be given due consideration:

- Do all workers understand what they should be doing, how they should be doing it, and who they must report to?
- Have they been consulted over their job descriptions?
- Are they aware of the rights and the responsibilities relating to their work?
- Are they adequately trained and supported, in terms of health and safety (see Module 2), their working conditions, and any arrangements for rest and nutrition?

A lack of clear information is a frequent cause of poor morale, while poor management and supervision are among the main causes of stress and high staff turnover. A useful reference document on this issue is the EPSU–HOSPEEM 'Recruitment and Retention - Framework of Actions'.
Available at: http://www.epsu.org/a/7158.

How do staff view their workplace?

A government survey of employment relationships in Canada conducted in 2000 found that in each one of the following key areas the health sector scored lowest out of 15 professions:

- employees' trust in their employer;
- employees' commitment to their employer;
- employees' assessments of workplace communications;
- employees' assessment of their influence in workplace decisions;
- employees' assessment of their work environment as healthy and supportive.

These extremely worrying findings led to a significant rethinking about the work environment and the implications for institutional functioning, as well as staff satisfaction or lack thereof. The author of the study recommended the following:

Steps for building high quality work environments

- Make a high-quality work environment central to your organization's values and mission.
- Build quality work environment goals into business plans.
- Create accountability for treating staff as assets.
- Provide incentives for supervisors and managers to act.
- Develop collaborative roles for unions and professional associations.
- Benchmark and track the impact of work environment quality.
- Diagnose areas of strength and weakness.
- Evaluate the impact of any organizational change on staff.
- Communicate your progress to all stakeholders.

Lowe, 2002.

Adapting the module to your situation

The regulations governing staff planning, selection and employment may be decided outside your workplace and it's possible that the hiring process is centralized and you have to accept the staff allocated. However, as we argued in earlier modules, you are in the best position to know your own facility and its needs, and you also have the right to make clear what those needs are in terms of staffing. If you are not getting the right people, take the initiative to draw up job descriptions yourself and submit them for consideration. Send in your own assessment not only of staff, but of job advertisements, of job descriptions, and other human resources matters.

Working conditions are up to you; your personnel and line managers need to explain duties, rights and obligations clearly, manage lines of responsibility, provide adequate facilities and ensure health and safety.

Checkpoints for Module 6

6.1	Plan staffing needs for the longer term, with clear job descriptions
6.2	Provide necessary facilities for staff in terms of washing, changing clothes, resting and eating
6.3	Provide non-monetary benefits and in-service training
6.4	Promote communication, teamwork and supportive supervision
6.5	Have in place contract practices, grievance procedures and disciplinary measures that are transparent and fairly applied.

Checkpoint 6.1

Plan staffing needs for the longer term, with clear job descriptions

WHY?

- The point of a plan with a longer view is to enable you to be proactive, not reactive. A proactive plan is shaped by *your* priorities and the anticipation of needs. This is more efficient, less time-consuming, and more cost-effective than if you react in order to fill gaps as they appear, and then perhaps have to spend more on agency nurses or midwives.
- As always, an integrated approach is the most fruitful. For example: a job analysis is necessary for efficient recruitment, and it also provides the basis for a clear and accurate job description. Clear job descriptions enable staff to understand and perform their duties –they also enhance job satisfaction and make supervision easier.
- A comprehensive plan also makes it easier to build in the necessary measures to support staff, from training and promotion opportunities, to provision of lockers and adequate canteen facilities.

REMINDER: CALCULATING STAFF TURNOVER

If your facility is quite large, it can be useful to calculate the turnover rate. This is worked out in percentages for a given period of time (for example, a year). There are two steps in the calculation process:

1. Add together the number of workers at the beginning of the year and the number at the end; then divide it by 2. This gives the average number of workers during the year.

2. Take the number of workers who left in the course of the year and divide it by the average number of people working in the same period. Multiply the result by 100 to obtain a percentage.

$$\frac{\text{Number of employees leaving during the year X 100}}{\text{Average number of workers employed over the year}}$$

HOW?

1. Be informed about trends in healthcare, training, and national budgets which may affect staff skills and availability. Take into account national regulations and international recommendations on staffing levels (e.g. ratios of personnel to patients).

2. Decide the main elements your plan should cover. This will depend on the national and local health sector staffing system, but do give careful consideration to the following:

- Identifying staffing gaps and assessing needs in each department and unit, across all categories and grades of staff.
- Maintaining teams with complementary backgrounds and the right mix and levels of skills and competencies.
- Ensuring that each post has a job description that covers tasks accurately and is clearly expressed: check that the worker concerned agrees with it and that the workload is in line with staff capabilities and resources.
- Allocating tasks to the appropriate category of staff, for example moving some administrative duties from a nurse to a clerical assistant –this frees up scarce nursing skills and time for direct patient care.
- Including a training programme which provides orientation for new staff, refreshes existing skills, introduces new ones, and supports promotion opportunities.
- Working hours, shift schedules, leave arrangements and other aspects of working time require careful consideration –see Module 7 for more details.
- The plan should also cover reporting and record-keeping, ensuring confidentiality, and including reasons for termination of employment, whether voluntary or otherwise.

There are many methods and tools to assist in planning for staffing needs. One of them is particularly designed for use at the health facility level:

Workload Indicators of Staffing Needs (WISN).

Developed by WHO in the late 1990s and recently revised, it provides health service managers with a systematic way to in plan and manage their health workforce.

The method is simple to apply; it uses available routine data that are collected in most health facilities.

The WISN approach is based on a health worker's workload with activity time standards applied for each workload component. It allows the health service manager to:

- determine how many health workers are required to cope with actual workload in a given facility;
- calculate workload and time required to accomplish tasks of different staff categories;
- understand workload and assess workload pressure of staff at a given health facility;
- establish fair workload distribution among staff;
- establish realistic targets for budgeting and resource allocation.

More information is provided in the Workload Indicators of Staffing Needs (WISN) User's Manual (WHO, 2010) available at www.who.int/hrh/resources/wisn_user_manual/en

Task shifting is about "making more efficient use of the human resources currently available" through "a process of delegation whereby tasks are moved, where appropriate, to less specialized health workers."(WHO, 2007)

Tasks may be shifted to a different category of staff provided the worker is properly trained and has adequate supervision and support to take over. Nurses, for example, are increasingly making basic diagnoses and prescribing medication. Additional responsibilities need to be recognized and rewarded, and job descriptions amended accordingly.

3. Make sure your plan takes into account existing policies or agreements on pay, benefits, working conditions, hiring and termination of employment, health and safety, and staff-patient ratios.

4. Include a communications strategy in your plan (see Checkpoint 6.4).

5. Build monitoring and evaluation into the plan from the beginning so that you can identify trends in staff recruitment and turnover, and assess whether the measures you're putting in place are effective. An exit interview is a good way of understanding the reasons why a worker is leaving. Compiling this information can reveal common patterns in causes of staff dissatisfaction.

6. Recognise the staff's 'right to know' (their right to know about risks and hazards at work, about prevention and protection, about relevant legislation, and other key information).

Hiring staff: key points

- To create a job description, write down a list of the tasks the worker is required to do (see Factsheet 6.2 in the Trainers' Guide). Next to each task, or group of tasks, make a note of the skills that the person will need to successfully perform them.
- Take into consideration education, skills and work experience needed; level of responsibility attached to the job; effort required; working conditions offered.
- Once the job description has been drafted, prepare a profile of the ideal candidate. The job description and profile will together make it much easier to write the advertisement for the job, to come up with interview questions, and to evaluate and select the best candidate. Make the key points into a table/matrix that can be used by the interviewer(s).
- The process of advertising for and selecting staff should be guided by a policy or protocol that is fair and prohibits bias and discrimination on any grounds, for example related to gender, race, religion or disability.
- Contractual arrangements –see Checkpoint 6.5
- Give new staff copies of all relevant policies and protocols, and provide orientation training to help them understand, in addition to their duties:
  - practical arrangements for working hours, breaks, pay and leave;
  - organizational values and practices, including how staff are expected to address patients and each other;
  - opportunities for training and advancement;
  - where to go for information and guidance.

See the Trainers' Guide for Case study 6.1, Retaining staff: an example from South Africa.

Checkpoint 6.2

Provide necessary facilities for staff in terms of washing, changing clothes, resting, and eating

WHY?

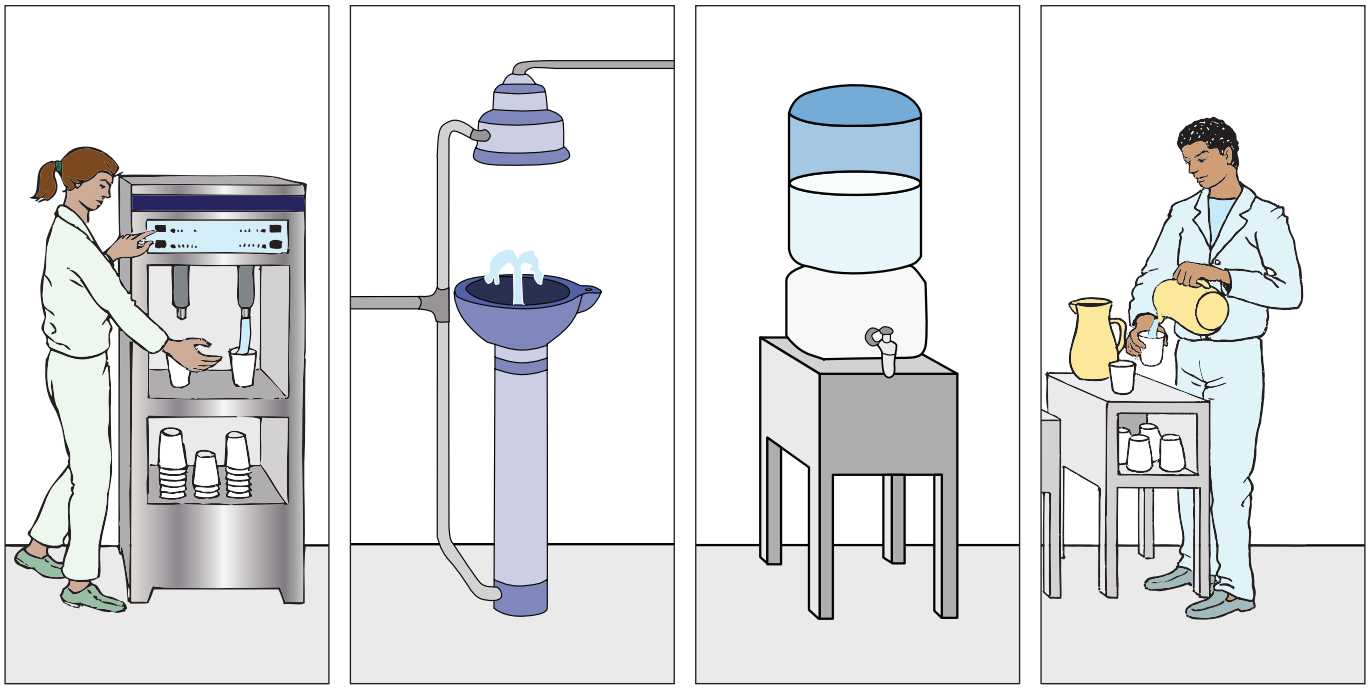
Work-related welfare facilities such as toilets, first-aid kits, lunch rooms, and lockers are often ignored or given a low priority. During each working day, workers have to drink water, eat food, go to the toilet and have a place for breaks and rest as these are fundamental needs permitting them to function healthily and efficiently. The lack of facilities can result in poor health and absences as well as being a serious source of dissatisfaction and stress.

HOW?

Ask staff to provide suggestions, but pay attention to the following areas –you can make the headings into a checklist for the HealthWISE team to go through department by department:

1. **Drinking water** is essential for staff and patients. Dehydration leads to fatigue, irritation and the risk of urinary and kidney infections. The kitchen should not be the only source of water –make clean water available at central or accessible places (but not toilets) by providing water containers, taps, or drinking fountains. 'Safe Drinking Water' signs should be put up. Wherever there is doubt about contamination, water must be thoroughly boiled or properly filtered or treated.

Figure 6.1
Four ways of providing drinking water



2. **Sanitary facilities** are also a requirement in the workplace. These should be kept clean and well maintained. Regular hand washing is a basic rule for infection control, and basins should be available in all units. Provide soap to ensure proper washing –liquid soap in a dispenser is better than cake soap which could be a source of bacteria. Provide paper towels and waste bins. Separate toilets should be available for staff and patients, and for women and men, with a sufficient number to avoid walking long distances or unreasonable waiting. Minimum numbers of wash basins and toilets at workplaces are usually set out in national laws.

3. **Uniforms and protective clothing.** Provide work clothing, if conditions require uniforms, special work clothes such as overalls, or suitable footwear for operating rooms, or protective clothing. Wearing specially designed work clothes can also help reduce accidents. Changing rooms should be available.

4. **Eating areas.** Most organizations that provide round-the-clock health care enable staff to take a meal, especially during the night as it is more difficult to get food at that time. Some smaller health facilities may not have the resources for a canteen, but they can provide an eating space or room where staff can eat their own food –if possible with facilities to heat food as well as prepare drinks. It should be situated away from the work stations and should be as comfortable as possible to enable staff to relax during meal breaks. Establishing canteen services helps staff have access to food and drink during short breaks. The space needed for a canteen for 50 staff members requires about 25 square metres; smaller spaces can be provided in work units.

5. **A good rest area reduces fatigue and stress.** Getting away from the work station helps staff relax and recover faster.

6. **Lockers and changing rooms.** Facilities for secure storage of clothes and personal belongings assist staff with their personal hygiene and appearance, make them feel more at home, and reduce anxiety about theft of personal possessions.

7. **Transport facilities.** Getting to and from the workplace may be long, difficult and tiring. This can cause anxiety and financial hardship for staff and result in lateness and absenteeism. Some health-care facilities provide a transport allowance or means of transport to and from the workplace. Even informing staff about public transport services, times, costs, and monthly or season ticket offers can be helpful.

Checkpoint 6.3

Provide non-monetary benefits and in-service training

WHY?

- Attracting, retaining and supporting staff is critical to the smooth delivery of quality care, especially in a competitive environment where there are shortages of health workers. Understanding what workers value in terms of their work environment and conditions, but also what makes their jobs more difficult, is an essential aspect of motivating and supporting staff.
- In-service training is not just a benefit for the individual workers: the whole workplace gains from it. Training is an opportunity to upgrade employees' knowledge and skills, which enables them to perform their jobs more efficiently. In health services the rapid rate of technological changes alone makes it essential to continuously upgrade skills, especially for the staff in clinical units. Training is also much appreciated by workers and helps give the facility a reputation for investing in staff and promoting high standards.

HOW?

1. **Non-cash benefits.** In many countries health sector wages are regulated by the government and individual health facilities can't authorize changes in staff pay policies even if they would like to. Pay, of course, is an important issue but staff aren't only interested in money. Find out what non-cash benefits workers would particularly appreciate and consider how these would influence recruitment and retention, job satisfaction, and performance efficiency, taking into account the costs attached. Here are some examples:

- Insurance schemes and medical care
- Work clothing, meals at work, transportation to and from the workplace
- Greater flexibility in working time arrangements (see Module 7)
- Increased paid leave
- Child care arrangements, help with education fees
- Learning and professional development opportunities
- Staff loans
- Accommodation, welfare, and sports facilities.

2. **Praise and appreciation.** Remember there are other ways to make staff feel valued. Praise and guidance make a positive difference to work performance. If management deals fairly with staff, expresses appreciation, and gives practical guidance when needed, it helps to build loyalty, improve staff retention and increase productive teamwork (see 'supportive supervision' in Checkpoint 6.4). Promotion and training opportunities are a valued and practical expression of appreciation, and you may consider offering a small gift, such as an engraved plaque, to recognize long service. Rewarding staff by allowing them a little extra time off can be perfect for workers with family responsibilities (if regulations allow some flexibility).

3. **Training.** This should include orientation for new staff, skills upgrading as necessary for new equipment or procedures, and training to extend and/or upgrade skills and competencies, and can be provided through:

- short courses in or outside the workplace;
- courses at health education or vocational training institutions, over a short or longer period of time, on a part-time basis; and
- on-the-job training by more experienced staff.

Free training is also possible; if you are planning to use new equipment, you can negotiate with the provider to give staff training on how to use it. Some NGOs, government departments, and international organizations provide or fund training so that your only cost is the workers' time.
Staff training should, where possible, be offered during normal working hours. It needs to be equally available to all staff, and have clear and transparent procedures for all those applying. Remember to create opportunities for staff on night duty and those who are not linked to clinical patient care units.

Performance is associated with recognition for knowledge and skills

A study was conducted in Armenia into the performance of health service providers in antenatal and postpartum care. It concluded that strong performance is associated with:

- first, having the practical knowledge and skills needed; and
- second, with performance feedback and recognition for their work.

Fort; Voltero, 2004

Checkpoint 6.4

Promote communications, teamwork and supportive supervision

WHY?

- A supportive working environment attracts and retains workers. Good managerial supervision, collaboration and teamwork, with frequent and open communication, are all characteristics of supportive workplaces.
- The health workplace depends on teamwork: cleaning, technical, medical and managerial staff all deliver important services, so the process works best where there is trust, respect, good communication and close cooperation among all members. The benefits of teamwork include:
  - improved understanding of the different roles and tasks of every team member;
  - better knowledge and skill sharing;
  - improved problem-identification and solving through exchange of ideas across different areas of expertise;
  - more efficient workflow;
  - a sense of belonging and of being valued.
- Supportive supervision is more effective than simple control over job tasks. It includes concern for staff development and growth, information, guidance, and team building, and encourages autonomy and responsibility. These practices not only contribute to staff satisfaction and reduce stress, but also help maintain efficiency, quality service provision, and health and safety. Poor supervision is a significant factor influencing the decision of staff to leave their jobs.

HOW?

1. **Teamwork.** The health facility as a whole is a team, as are the individual departments and work units: aim to strengthen unit teams at the same time as promoting cooperation among teams.

Figure 6.2
Team meetings produce valuable ideas and proposals to improve work flow and service delivery

2. **Communications.** Successful team-building promotes good communications. Building a culture of open, two-way communication with staff, achieves better performance outcomes and improved work processes. The lack of information, and of channels to express views, is a source of great frustration and stress, and can contribute to medical errors. Ways of providing staff with regular information include electronic mail, newsletters, SMS, information boards and systematic information-sharing by supervisors.

   However, the most important part of communication is **listening** and **understanding** what people are trying to convey, so it is also important to hold regular meetings to provide an opportunity for staff to discuss issues, ask questions and receive feedback. Informal communications can be fostered through selected managers or supervisors having an 'open door' policy, which should ensure real but structured access for staff.

3. **Supervision:**

- **Clarify the supervisors' role** – agree on the aspects of the role and the expected results together with staff, as well as the way the work should be carried out; make it clear what you mean by 'supportive supervision'.
- **Be clear about the task and the results expected from employees**, based on consultation with them.
- **Give staff more autonomy** –staff who have the power to decide how they do their tasks experience greater job satisfaction and perform better because they feel trusted, valued, and motivated; it gives them some flexibility; and they have the chance to take responsibility, learn and apply new skills, and foster other abilities.
- **Encourage supervisors to give feedback to staff** –they should express appreciation for performance, give credit to workers who take initiatives, and implement good ideas. They should also be ready to identify improvement needs and development potential, including providing constructive advice on actions to be taken.

Greater responsibility improves staff motivation

Research into motivation and performance of staff in Mali found that health workers were motivated by being given greater responsibility and being held accountable for their work.

Workers reported that the main motivating factors in their work, apart from salary, were responsibility, recognition, and training; while the main de-motivating factor was the lack of equipment and materials.

These findings were consistent across all groups of health workers, though physicians placed greater emphasis on feeling responsible and nurses on salary.

Dieleman et al., 2006

Checkpoint 6.5

Have in place contract practices, grievance procedures, and disciplinary measures that are transparent and fairly applied

WHY?

- Contractual, disciplinary and grievance arrangements that are clear, widely disseminated, and understood by all staff reduce uncertainty and anxiety. For staff to feel fully secure, rules and procedures must be applied without exception, favour or discrimination (see Module 4).
- If the steps to be taken in the event of a complaint or grievance are transparent and straightforward, staff will be more likely to raise issues while they are at a manageable stage.

HOW?

1. **Contracts.** Your workplace may not be responsible for all contractual arrangements, but its management still has a responsibility to make sure these are clear and fair, that the union or workers' representative has been consulted, and that staff understand these arrangements. It is also up to management to make sure they are applied fully and fairly in practice, and in consultation with the union where relevant. It is helpful if the union has a close and constructive relationship with the personnel department, perhaps through a joint committee or regular meetings.

   Employment practices must comply with labour legislation and other relevant national policies – ILO standards and WHO resource materials offer guidance. Sound practices include:

   - Short-term contracts are only used for short-term needs: renewing short-term contracts continuously is seen as exploitation of staff and creates insecurity.
   - Probationary conditions are clearly explained and satisfactory staff are confirmed in their jobs at the end of the probationary period.
   - All staff have a signed copy of their employment contract.
   - In the event of dismissal or non-extension of contracts, the decision is based on organizational rules that staff are aware of and the person concerned understands the reasons.
   - The workplace is prepared for and has measures in place that cover justified absenteeism; e.g. maternity leave, sick child care or absences related to sickness or injury.

2. **System for discipline and complaints.** There are two different procedures here but both need to be set out in a clear, step by step manner and explained to all staff. They should also be included in the orientation training for new staff.

   Disciplinary procedures. The workplace regulations make it clear what standards of work and behaviour are expected, and staff who fall short should have every opportunity to improve their practice before it becomes a disciplinary matter. Unless the offence is serious, the first step should be an informal and private warning by a supervisor or workers' representative. If there's no improvement, a written warning should clearly explain 1) what changes are expected, and 2) the consequences if there is no change. Avoid using collective or group punishments to discipline a single worker and disciplining or pointing out the faults of staff in front of others. Specific measures will cover more serious transgression of the rules; for example, sexual harassment, neglect of duties, or theft.
   To promote cooperation, introduce a "no blame" policy so that everyone can learn from it. When equipment breaks or other problems arise it is important to use this as an opportunity to learn from mistakes rather than punishing the person responsible. A "no blame" policy means that staff can admit mistakes or point out problems so that they can be corrected quickly. This saves time and money and helps maintain the quality of service delivery.

Figure 6.3

This worker is late again - but the manager is careful to talk to him about it privately

Grievance or complaints procedures. The difference here is that it's an individual employee who has a problem with a fellow worker, with management, or with some aspect of institutional practice. For this reason the steps to take should be especially clear and accessible, because most people prefer to suffer in silence than 'rock the boat' or risk being seen as a trouble maker. The training for supervisors should insist on the need for them to encourage disclosure and take complaints seriously, respecting confidentiality. This is also an area where collaborating with the union or workers' representative is essential. Rules and regulations on both disciplinary and complaint procedures should be established in consultation with workers' representatives.

REMINDER: STAFF MANAGEMENT

- Do a job analysis and job description
- Offer training opportunities
- Introduce new staff to your organization's culture, practices, and rules
- Provide staff with tools to do the job
- Be clear with staff about what is expected from them
- Give staff as much control as possible
- Empower staff by giving them more responsibility, provide training
- Plan ahead for absences
- Give praise when it is due and never deliver criticism in public
- Organize regular meetings with each staff member
- Have a clear discipline and grievance policy
- Provide necessary facilities for rest and refreshment

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ILO: International labour standards
These are legal instruments drawn up by the ILO's constituents (governments, employers, and workers) and set 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. Adopted in 1998, the ILO Declaration on Fundamental Principles and Rights at Work commits member States to respect and promote principles and rights in four categories, whether or not they have ratified the relevant Conventions. These categories are - in addition to the elimination of forced labour and child labour - freedom of association and the right to collective bargaining, and the elimination of discrimination in respect of employment.
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Module 7:

Working time and family-friendly measures

This module is designed to complement Module 6; the staffing plan in Module 6 includes the organization of working time.

In most countries working time is regulated nationally, but at the organizational level there is still room for designing work schedules in a way that balances your institution's requirements with staff welfare. Taking into account the personal needs and family responsibilities of staff also serves the needs of patients, as reduced fatigue and stress among care workers means better performance and lower levels of absenteeism and staff turnover.

The objectives of this module are to examine the ways working time can be organized in order to:

- Assist with establishing work schedules that improve safety, efficiency, and service delivery.
- Take into account the staff's need to balance work with private life and family responsibilities.

Working time should be structured to ensure high individual and organizational performance, as well as helping staff to balance family and work responsibilities. It isn't easy to combine the competing demands, but a consultative and participatory approach is likely to yield the best results.

Special consideration should be given to the needs of pregnant and nursing workers, and the final section of this module is devoted to aspects of maternity protection and other family-friendly measures, including leave for fathers as well as mothers.

See the Trainers' Guide for a summary of the Working Time Directive of the European Union (4 November 2003).

Adapting the module to your situation

Working hours, rest times, and leave arrangements are usually the subject of national legislation, so you need to check what regulations apply to your sector and institution. You may also have a workplace policy or collective agreement which adds detail and perhaps extends the basic legal provisions. It is helpful to refer to ILO international labour standards which recommend minimum and maximum working hours, namely:

- a maximum 48-hour work week (no more than 10 hours a day);
- at least a day's rest (24 hours) per week; and
- a minimum of three weeks of paid annual leave per year.

If you regularly need staff to work longer hours then you should review overall staffing levels and task allocations.

Note: These limits originate from the Hours of Work (Commerce and Offices) Convention, 1930 (No. 30), and may not strictly apply to the health services sector.

Checkpoints for Module 7

7.1	Organize working time to reduce long hours and minimize irregular work schedules
7.2	Make sure that all staff get enough rest time and that overtime is kept to a minimum
7.3	Use flexible working time and leave arrangements
7.4	Plan working time to take into account the family, home and social responsibilities of staff
7.5	Provide maternity protection and parental leave, including arrangements for breast-feeding

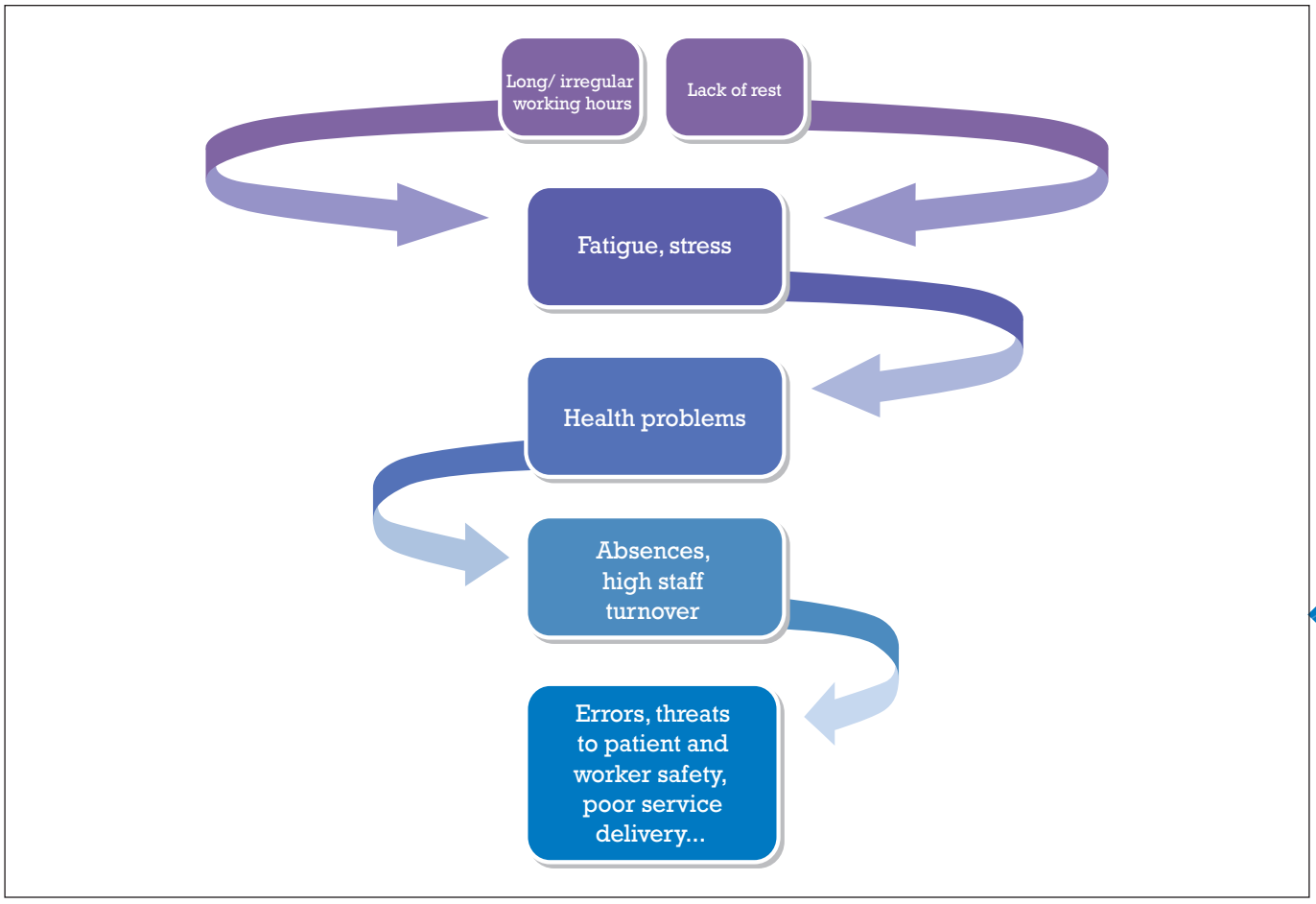
Checkpoint 7.1

Organize working time to reduce long hours and minimize irregular work schedules

WHY?

- Studies show that performance declines and safety risks increase if working time becomes too long (Tucker and Folkard, 2012; Wagstaff and Sigstad, 2011). This is because long work hours are linked to:
  - fatigue;
  - stress, as staff struggle to keep up work performance;
  - other health problems, because people who are tired and stressed are more susceptible to other ailments; and
  - difficulties in balancing work and family responsibilities.
- Where working hours change often and in an irregular manner, it is impossible for staff to adjust their internal time clocks or to have predictable family and social lives.
- Optimum organization of working time has the following benefits:
  - staff with fewer stress symptoms, lower illness rates, better attendance;
  - more consistent work output;
  - lower overtime costs;
  - fewer accidents, and improved patient safety and care.

Figure 7.1
Effects of long hours or irregular working schedules



HOW?

To improve the organization of working time, managers need to find the best formula for the number and allocation of hours of work and rest.

1. **Consult**

- Involving staff in the process of designing shift schedules and working hours generally provides the best chance of coming up with schedules that work well. Discuss fatigue, stress, delivery, and performance with them and look together for ways to deal with these issues. Experienced employees know why some schedules work and others don't; they also know the problems that staff face when trying to balance their work with family and other responsibilities.

  Create an atmosphere where staff are able to express their personal needs and preferences and feel motivated to offer more general suggestions. Give staff the opportunity to request different types of working time arrangements, or choose not to work on specified days.

Worker involvement in the design of work schedules...

- Improves 'fit' between staff, tasks and working hours
- Improves staff performance and job satisfaction
- Improves the institution's service delivery

2. **Review job design**, **task allocations and work schedules**

- Make sure that you have the most **appropriate task allocation and skills mix** –not only for the sake of efficient delivery but also to relieve some of the pressures on working time (see Module 6).
- Develop accurate **shift rosters** well ahead of time to ensure that sufficient staff with the right skills mix are available to fulfil service delivery needs during every shift.
- **Keep a log** of the hours that staff work. By doing this, you will know when someone has worked too many hours or too many days without a break, and might be in danger of increased accidents or errors. In areas such as intensive care units where staff work rotating shifts, the best way to keep track of the hours worked, is to develop monthly shift rosters well in advance to calculate the total amount of working hours over this period.
- **Increase job skills training.** Trained or experienced workers can often do in a much shorter time what another person has difficulty completing. They understand the tasks they are doing, the equipment they are using, and the problems they might encounter. This saves time and helps avoid tasks needing to be re-done.

Note: Working time is used most efficiently when staff can rely on well-maintained equipment and sufficient supplies (see Module 8).

3. **Reduce the negative impact of shift work**

A shift system of some sort is inevitable in a health facility that provides services seven days a week and around the clock. It also suits the personal and family schedules of some workers; however, for many workers shift work is a major challenge. While shifts are not ideal for staff health or efficiency –especially those worked at nights, weekends, or public holidays– they can be organized in ways that minimize their negative side effects.

- *Ensure regular and predictable schedules.* Keep schedules as clear and simple as possible and make sure they are displayed and accessible to everyone concerned. Staff should receive notice of any changes in the schedule well in advance. Rules for assigning staff to teams and teams to schedules should be equitable and transparent.
- Take into account the *availability of public transport, safety on the streets, and local customs,* as well as the needs and preferences of workers. Ensure that staff have a reliable way of getting to work and home from all shifts (especially at night).
- *Shift changes and breaks.* As a general rule, shifts should rotate in a forward direction, not backwards (e.g. day shift to afternoon shift/evening shift to night shift). Make sure that breaks are long enough to provide a sufficient period of recuperative rest. A break of only seven to ten hours should be avoided before rotating to a new shift, such as going from morning to night shift on the same day of the week. Provide a rest period of at least 24 hours after each set of night shifts. The more consecutive nights worked, the more rest time should be allowed before the next rotation occurs.
- *Longer shifts***.** As a result of many studies (e.g. Tucker and Folkard, 2012; Ferguson & Dawson, 2012), 12-

hour shifts are now seen as acceptable but the upper limit of shift length –and only if adequate periods of rest between shifts, breaks during shifts, and longer weekly rest periods are guaranteed. For example, if four consecutive 12-hour shifts are worked, then a minimum of three consecutive rest days should be provided. The impact of 12-hour shifts on workers' health and organizational efficiency should be monitored, and staff and their representatives or unions should be involved in their design and implementation.

- *Workload distribution*. Re-distribute workloads to avoid doing the heaviest or most difficult work at times of high fatigue; for example, the last few hours of long shifts, especially at night.
- *Changeover*. Staggered start/end times can be useful both for workers and for the administration as a way of managing peak periods for admissions or emergencies. Such schedules should ideally be based on an analysis of the facility's operational requirements and on workers' needs and preferences. Remember that shift changeover times are linked to higher risk of errors and accidents so consider moving shift changeover away from peak busy times. Allow time for hand-over briefings between shifts.

REMINDER

Shifts may be fixed or rotating.

Rotas show the order in which people take their turn to perform certain duties.

See Glossary for a fuller definition

Night work

Night duty rotations are common practice and inevitable, but it is necessary to be aware of the human and financial costs that are involved. Negative effects of night work may include reduced quality of work, more accidents due to reduced alertness and less supervision, as well as putting pressure on home and social life. The disruption of workers' natural biological timing system (the circadian rhythm) can cause sleep, cardiovascular, digestive, and reproductive disorders.

Control or manage these effects by:

- avoiding permanent (fixed or non-rotating) night shifts unless staff request it (and check that they understand the negative effects of night work);
- avoiding weekly shift rotation as the adaptation of the human biological clock to night work is difficult and slow: preference may be given to fast shift rotation (e.g. two day shifts, followed by two afternoon/evening shifts, followed by two night shifts, followed by two rest days) or slow shift rotation (rotating shifts on a monthly basis);
- providing proper facilities for staff on night duty (e.g. first aid, rest breaks, regular health assessments);
- modifying the working environment to simulate daytime and promote alertness, for example through lighting, temperature –except in areas where patients sleep, and (most importantly) ventilation;
- taking into account transport and security issues.

Checkpoint 7.2

Make sure that all staff get enough rest time and that overtime is kept to a minimum

WHY?

- Rested staff are productive staff. Workers usually start the day alert and productive, but their performance level tends to decrease as the day goes on due to the gradual build-up of fatigue. If employees rest before they become too tired, recovery is much faster. Rest breaks during the working day (or night) help avoid the build-up of fatigue.
- Rests between work shifts (and at the end of the working week) provide time for staff to recuperate, fulfil family and other personal responsibilities, and refresh themselves before the next work session.
- Overtime (i.e. work beyond the normal hours limit) can provide a worker with the opportunity to earn a little more (if it is properly compensated) and it can help the health facility to manage service delivery. However it isn't a long-term solution: there are limits to how long an individual can work without negative effects, as described in Checkpoint 7.1. Overtime is likely to be less productive than normal working hours, and it can become costly for the institution.

HOW?

1. **Rest time** includes breaks during the working day; rests between shifts; weekly rest days. All three types are important and can impact on the performance of the workplace. Seek the views of staff individually and through their unions or workplace representatives. Take into account the following:

- the type of work;
- the increases and reductions in work demands;
- how physically or mentally tiring the job is;
- the number of days worked, especially the number of days worked *in a row*;
- the personal circumstances of the worker.

2. **Ensure that:**

- At least 11 hours of rest is provided between shifts (daily rest) and a minimum 24 consecutive hours of rest at least once a week (weekly rest).
- Staff are allowed frequent shorter breaks rather than one long break to reduce fatigue and lack of concentration. At least one ten-minute break in the morning and one in the afternoon, in addition to a longer break for lunch, are absolutely necessary.
- Staff in patient care areas have a rotation system to allow each other to take breaks.
- Staff have a place to rest that is away from the working space and that they all have access to drinking water and toilets (see Module 6).
- Ergonomic aspects of workstations are taken into consideration: this can reduce fatigue. For example, respect the 'elbow rule' to avoid fatigue and pain (work surfaces should generally be at elbow level) and provide chairs of correct seat height with good back support (more details in Module 2) Whether staff work bent over a desk or laboratory counter or stand at an operating theatre table, it is important to change the position regularly in order to avoid aching or stiff joints.

3. **Use overtime wisely.** In many countries employers are required to pay a higher rate for overtime, or work on weekends and public holidays, to compensate health workers for the extra effort and inconvenience of staying longer at work (it should be at least 25 per cent higher, according to ILO standards). If possible, overtime should be avoided or kept to a minimum, especially in jobs involving special hazards or heavy physical or mental strain, or those with longer shifts. With 12-hour shifts, overtime should not be used at all.

To avoid an additional burden on health services and health workers:

- Limit the use of overtime through improved planning and increased work efficiency.
- Keep track of hours and shifts worked by each staff member –share extra hours fairly and respect legal limits of work hours.
- Give workers the option of compensatory time off in lieu of payment.
- Give advance notice of required overtime work and give staff a choice of whether or not to work overtime whenever possible.

- Set wage rates at a level that enables staff to earn a proper wage without relying on overtime.
- All staff should have a written contract that sets out their normal working hours, their pay, and the pay rate they will receive if they work additional hours (see Module 6). Pay slips should include details of the overtime worked and the hourly rate paid.

Innovative ways of managing overtime

Situation: Heidelberg University Hospital, Germany, experienced a shortage of nursing staff and a sharp increase in overtime.

Action: Through an agreement between the management and workers, the hospital established a voluntary pool of registered nurses for the reduction of overtime. This provided the possibility of time off in compensation for extra hours worked. Nurses doing overtime can choose between 125% payment (per hour) or 25% (allowance factor) and the exact time back, or all the 125% back as time off.

Result: The hospital has greater flexibility and can use its own staff to cover periods where additional staff are required.

Cost and sustainability: The new system was more or less in place within a year, but the financial impact is still to be determined.

Personal communication from H. Beck, Gesamtpersonalratsvorsitzender, Universitätskliniken Heidelberg, Germany, June 2010.

Checkpoint 7.3

Use flexible working time and leave arrangements

WHY?

- The volume of demand for health services and the type of care required may vary considerably across the seasons or simply from day to day. Flexibility has to be built into work schedules in order to cope with fluctuations. Similarly, pressures on staff from family and other personal responsibilities also vary, and it can be very helpful for them to benefit from some flexibility in working hours. A win–win situation exists where staff are willing to give extra in an emergency because they know they also have choices in the number of hours they work and when they work them. A health facility with such arrangements tends to score better in terms of recruitment and retention of staff as well as morale and performance.
- Working time flexibility is not the same as a lack of advance planning! On the contrary, you need to build it into your schedules rather than reacting at the last minute and giving staff inadequate notice of shifts and leave.

HOW?

1. *Flexible working time arrangements should meet both workers' needs and organizational requirements.* Working time can be made more flexible by a variation in one or more of the following:

- the number of hours worked each working day
- the number of hours worked each week
- the specific hours or days of the week during which workers work.

2. These arrangements should be carefully designed to ensure *compliance with legislation and organizational regulations*, and *discussed with the union or workers' representative* to make sure that all contractual and practical aspects are taken into account.

3. Make sure that *staff are clear about minimum hours and responsibilities*, especially when introducing a new scheme. Always give plenty of notice before changing schedules or leave arrangements, whether regular or flexible.

4. *Consider the range of possibilities and decide what suits the needs of your facility and its staff.* Overtime, part-time work, and shift work are traditional forms of flexible working time arrangements, but there are a number of other possibilities, such as:

- ***Part-time work*** means that some staff are employed to work fewer hours than normal; for example, fewer than 35 or 30 hours per week (depending on the country) instead of 40. Using part-time staff can give employers improved flexibility, because there is a larger pool of staff to rely upon to help in periods of high demand. At the same time it can suit staff who wish, perhaps for a limited time, to pursue studies or have more time for family or community responsibilities.
- ***Job sharing*** is a form of part-time work where two persons are appointed to share one post. Each works a portion of the full-time hours of the job, as agreed between them and with the manager of their work unit.
- ***Staggered hours schemes*** make it possible for an employee, or groups of employees, to start and finish work at slightly different times and may be able to choose their start time from a range of options; once the choice is made, this becomes their fixed schedule. Staggered hours schemes can be particularly helpful in allowing staff to avoid rush-hour travel and also gives health services the chance to have the maximum number of staff at the busiest time of the day.
- ***Hours averaging/annualized hours***: this system permits variations in duration of work each week, as long as the following conditions are met:
  - a fixed *total* number of hours of work over a specified period;
  - an *average* number of hours of work *per week* during the same period.
- ***Flexitime means*** that individual workers are able to decide their own hours of work on a daily or weekly basis within an established framework. The number of hours worked each day or week, and the daily starting and end times may vary, but the employee has to work certain 'core' hours each day; for example, flexible working hours from 06:00 to 20:00 with 'core' hours (mandatory working hours) between 10:00 and 16:00. Workplaces sometimes also set a minimum number of hours to be worked over a specified period of time (e.g. over a month).

- ***Flexible breaks*** work on a similar principle – they give staff the option to take shorter lunch breaks and, for example, go home earlier.
- ***Time banks or time savings accounts*** allow workers to 'bank' the extra hours they work in excess of normal hours in a particular period (e.g. a month) and use them to reduce their working hours or take leave days in another month. Individual contracts or collective agreements determine how many hours a worker can bank, the rate of time compensation (e.g. 1.5 hours for every hour of overtime), and how long they can hold on to them (e.g. extra hours to be used within 3 months).
- A ***compressed work week*** means that the total number of hours worked in a week doesn't change, but those hours are scheduled over fewer days than the normal working week. An example is four days of 10-hour shifts rather than five days of 8 hours. This can be beneficial for staff who travel long distances to work or who have regular commitments outside work, and can also potentially save on operational costs (e.g. energy costs).

5. Take into account the advantages and disadvantages of most flexible working time arrangements:

Advantages for employers:

- increases in workers' job satisfaction, which also brings benefits for enterprises as well (e.g. increased motivation and performance, reduced absenteeism);
- potential for cost savings on overtime and other premium payments;
- better adaptation to variations in workload.

Disadvantages for employers:

- increased complexity in the management of working hours, which can increase administrative costs.

Advantages for workers:

- 'time sovereignty' (choice over working hours), leading to positive effects on health and well-being;
- additional days off for training, family or holidays;
- in general, better balance between work and personal life.

Disadvantages for workers:

- potential risk of overloaded time-saving accounts and restrictions on how accumulated time off can be used –in combination, these two factors may substantially limit degree of 'time sovereignty' actually available.

Tips for health workers who must work shifts: see Factsheet 7.3 in the Trainers' Guide.

Checkpoint 7.4

Plan working time to take into account the family, home, and social responsibilities of staff

WHY?

- The staff who keep the health service going are people with homes, families, interests and commitments outside work. There isn't a neat separation between home and work –each impacts the other.
- The planning of tasks and working time is easier if it takes account of the personal and social needs and responsibilities of staff. The result will be organizational effectiveness as well as employee well-being.
- Arrangements to support a work-life balance (when provided to all staff) have all-round benefits because they:
  - improve working relationships, morale and job satisfaction, reduce absenteeism and staff turnover;
  - make it easy for the institution to attract and retain talented and experienced staff;
  - promote equal employment opportunities, reduce gender inequalities and prevent economic and social exclusion;
  - help maintain the incomes of workers and their families, reinforcing their social and economic wellbeing and improve working conditions;
  - improve the institution's image and its social responsibility.

REMINDER

Family responsibilities refer to the duties undertaken for the care of the household and family. These aren't purely personal responsibilities because they are fundamental to a healthy society and workforce. They involve a wide range of activities, most of them unpaid.

Family-friendly workplace measures are actions or procedures that help staff reconcile their work and family responsibilities.

A healthy work–life balance is the right of all workers, whether or not they have families. Workers should have enough time to recover from the demands of work and pursue personal and social activities.

The *division of family responsibilities* is influenced by gender-based norms and customs. Women tend to bear most responsibility for domestic tasks and care of dependants but these can and should be carried out by men as well as women. Pregnancy and breastfeeding are the only circumstances that require special measures for women.

While governments hold the main responsibility for setting the enabling legal and policy framework, including social protection, much can be also done at the organizational level; collective bargaining agreements and/or workplace policies can make conditions of work more compatible with family responsibilities.

HOW?

Planning to take into account family responsibilities is more effective if you are well-informed about staff needs and constraints. The union or staff representative should be consulted both to provide valuable information and to make suggestions for appropriate measures. These depend on the size and resources of your workplace, but options include:

1. **Work organization, working hours and shift schedules.** Checkpoints 7.1 to 7.3 have already set out a number of principles and a range of measures that are useful in supporting a healthy work-life balance –especially the flexible working time options. At the same time, predictability and advanced notice of duties are often important to carers: it could be

helpful, for example, to change from rotating to fixed shifts; schedule meetings within normal working hours and discuss with carers what they can do if normal care arrangements break down.

2. **Leave arrangements.** These mainly concern:

   - annual leave, with the right of workers to choose when to take it;
   - sick leave;
   - leave for family responsibilities;
   - short emergency or care leave (for unexpected family problems, such as the illness of a child, or planned care needs);
   - maternity, paternity, and parental leave (see Checkpoint 7.5);
   - long carer's leave (in the case of long-term care needs of a dependent family member).

   The following points relate to the planning of leave arrangements:

- **Clear policies.** Leave entitlements may be governed by national law as well as your workplace regulations. Policies or protocols, as well as individual contracts, should explain to all staff their rights to take leave, the amount of leave they can take, how it should be booked, the notice required, and the pay that staff will receive as well as any impact on other employment benefits or rights (e.g. seniority, pension, training, etc.). Encourage staff to take sick leave when they need it rather than risk spreading infection or working poorly. Some countries provide for family emergency leave entitlements; if not, consider provisions for special leave arrangements in the workplace policy.
- **Forward planning.** Make sure you have a leave calendar that is available for everyone so that absences can be planned. In the event of a longer leave this would allow for a hand-over period. In planning ahead:
  - give staff as much free choice as possible about when they take their leave so that they can match it to family needs (e.g. school holidays);
  - keep clear leave records so that you know how much leave each employee has left and take this into account in planning service delivery.
- **Paid leave.** In some countries the law demands that employers pay staff during leave, while other countries only legislate the period that employers should provide (usually where maternity cash benefits are provided through social insurance or public funds). As part of collective bargaining agreements or internal workplace policies, many employers have also opted to provide longer or better paid maternity or paternity leave schemes, in addition to maternity benefits paid by social insurance. Paid leave is a good investment because:
  - workers are more likely to stay with the institution, saving recruitment and training costs;
  - workers who come back to work early because of financial pressures may end up being absent later or working less efficiently because they haven't taken the time needed to rest and recover properly.

3. **Care facilities at or near the workplace** and arrangements to assist with family responsibilities. Meeting the care needs of family members can be a major challenge. The AIDS epidemic has added a huge burden of care, especially in Africa. Women carry out the largest share of family care, but it is helpful if the workplace advocates for men to share responsibility more fully –as well as providing practical support.

   Some employers provide support by supplying information and permitting flexibility in working time; sometimes they make links with care services in the community. Others directly provide child care, or give financial help with care costs. Whatever support is made available this will increase chances of retaining the best staff and improve their performance by reducing work-family conflict.

   Depending on local circumstances, arrangements could include:

   - child care facilities at or near the workplace;
   - supporting community-based social care services for the elderly, the temporarily or permanently ill, and for people with disabilities;
   - after-school spaces;
   - subsidies for child care; and
   - information for staff taking care of a family member.

If your facility is small, consider forming partnerships with other organizations and pooling resources, for example:

- set up a nursery or crèche which can be used by several workplaces;
- negotiate with a local child-care provider, day-care or long-term care centre for your staff to get discounted places;
- advocate for community services to provide child or elder care –after school clubs are especially useful for workers with unsocial or atypical hours;
- contact relevant NGOs and public bodies.

You can also help and encourage staff to share information and to come together to arrange care.

Child care arrangements at Rennes Atalante Science and Technology Park, Beaulieu, France

The *Rennes Atalante Park* in Beaulieu houses 111 companies in the electronics and information technology sectors, employing more than 7000 staff; Sévigné, a private polyclinic, and Kéolis Urban Transport are among them.

Situation: Eighty per cent of the 350 employees of the Sévigné Polyclinic are women, mostly doctors and nurses. Kéolis Urban Transport employs -among others- 550 drivers of whom 20 per cent are women. Most health and transport workers work irregular and atypical working hours: early morning, night, and weekend work schedules which present challenges with child-care arrangements.

Action: A wide range of partners –including national ministries, social security institutions, municipalities, companies, trade unions and NGOs– got together to develop a solution. An inter-enterprise and inter-municipality multi-care centre for workers on atypical hours was created, and which provided regular, occasional, and part-time care for children from two months to four years. Calais Crèche is managed by an NGO and was opened in 2004. The crèche is open from 6.00 a.m. to 9.30 p.m., Monday to Friday, including school holidays.

Result: The outcome of this multi-stakeholder participatory process is quality child care that meets the needs of working parents in the context of non-standard working hours, and promotes work–family balance and social inclusion.

Cost and sustainability: All the parties involved contribute to the running costs with parents contributing about one-fifth. In 2007 the parents' contribution was 1.70 Euros for one hour of child care.

(Adapted from Hein; Cassirer, 2010).

Checkpoint 7.5

Provide maternity protection and parental leave, including arrangements for breast-feeding

WHY?

- The predominance of women working in the health sector has led to many gender- responsive employment practices, including provisions for maternity protection. It is only women who become pregnant, can give birth and may breastfeed, so their specific needs must be recognized and specifically addressed; however, all workers, both men and women, need protection from reproductive hazards in the workplace.
- If the process is well managed, the employees concerned continue to be active members of the team during pregnancy and on their return from maternity leave. They feel secure in their jobs and are more likely to be loyal to the institution. Service delivery is less disrupted by adequate maternity protection provisions, including breastfeeding support, than by a high turnover of dissatisfied, stressed, or sick staff.
- Related leave arrangements, including paternity leave and parental leave for both men and women in a child's early years, in line or beyond statutory provisions, all go towards building a relationship of trust and respect between staff and employers, raise morale generally, and give the institution a good reputation as a socially responsible employer. Having long-serving employees with a healthy work-family balance is the key to workplace safety and quality of health service delivery.

REMINDER

Pregnancy is not an illness and working during pregnancy is not, in itself, a risk, except immediately before or after the birth and during a pregnancy with complications. Many women continue to work late into their pregnancies without any problems, remain highly productive, and return to work after maternity leave to resume normal duties. Practical workplace support for expectant mothers– such as ensuring access to water and appropriate nutrition, enabling short rests and encouraging antenatal checks– contribute to their physical and emotional wellbeing. This is important both for individual women and workplaces, as well as for the health of future generations and society as a whole.

The health-care workplace is, however, exceptional in some respects because of the risks of exposure to diseases, to toxic chemicals, and to radiation (see Module 1). More precautions are therefore needed to prevent women from miscarrying or giving birth to premature, low birth weight, or disabled babies, as well as suffering complications during pregnancy and labour.

HOW?

1. **Ensure protection from reproductive hazards** that may affect men and women workers, for example sterilants, radiation, anaesthetics, and infectious diseases (see Module 1).

2. **Maternity protection involves a combination of measures**, designed to protect working women from discrimination, harm, or loss arising from pregnancy and maternity at work. There may be legislation on maternity protection, which sets minimum standards, but the workplace can of course improve on these. A number of ILO standards guide practice in this area.

   Basic maternity protection measures cover:

   - *Maternity leave:* Maternity leave is a period of absence/paid leave from work for maternity-related reasons. It is taken by a woman in the period around childbirth to protect her health and that of her child.

- *Cash and medical benefits:* The right to cash benefits during maternity leave and healthcare related to pregnancy, childbirth, and the postnatal period.
- *Employment protection and non-discrimination (the right to return):* This guarantees that pregnant and breastfeeding mothers will not lose their jobs because of their pregnancy and maternity and they will return to the same or equivalent position paid at the same rate after their maternity leave. It also protects women from maternity-based discrimination at work.
- *Health protection for the mother and her child before and after birth:* This involves making sure that the workplace, work practices and working conditions are safe, so that a pregnant or breastfeeding worker and her child are not injured or hurt, or exposed to work that is prejudicial to their health.
- *Arrangements for breastfeeding:* This involves making simple arrangements so that mothers can continue to breastfeed or express breast milk when they return to work. Breastfeeding is vital to the health of the mother and the child.

The ILO Maternity Protection Convention, 2000 (No. 183) provides for:

- a minimum period of 14 weeks maternity leave, including a compulsory period of six weeks leave following childbirth and additional leave for illnesses, complications, or risk of complications related to pregnancy or childbirth;
- income replacement during leave of at least two-thirds of earnings, preferably through social insurance or public funds (to prevent the woman from being pressured to return to work too soon and thus putting her health or that of the child at risk);
- the right of pregnant or nursing women not to perform unhealthy or hazardous work;
- medical benefits, including prenatal, childbirth and postnatal health care, with hospitalization if necessary;
- protection against maternity-related dismissal and the right to return to the same position or an equivalent one paid at the same rate;
- prohibition of compulsory pregnancy tests;
- minimum of one daily breastfeeding break with pay, or a daily reduction of working hours to breastfeed.

3. **Train managers and supervisors** so that they understand, implement, and support the measures on a day-to-day basis. Information sessions for staff should also be organized to raise awareness about maternal health, vertical transmission of HIV and parental care responsibilities as well as the specifics of the arrangements in place.

Maternity leave and employment security

Maternity leave is not sickness or holiday leave, it is taken to protect the health of a pregnant woman and of the child. During this time her employment is protected and she has the right to return to her job or to a comparable post with no loss of pay, seniority, or other employment rights on her return. If staff think they will lose their jobs if they take leave, they are not likely to take leave even when it is essential. Maternity leave is so important for the health of the mother and child that almost all countries have laws to provide for it and set out how much pay the worker should receive during her absence.

If maternity leave is not paid through social insurance or public funds, and if the law does not require employers to provide pay during maternity leave, your health facility could still consider alternatives, for example:

- Voluntary payment of maternity leave benefits;
- Helping the worker join a private insurance scheme and contributing to it;
- Helping the worker to save in advance;
- Giving the worker a small advance on future pay with a long repayment period.

Figure 7.1
A pregnant worker trains a colleague to do her job in preparation for her maternity leave

Breastfeeding

Supporting breastfeeding in line with international recommendations[1] is extremely important for the future health of both the mother and child. When employees with new babies return to work they are likely to be breastfeeding. Supporting this makes sense because breastfed babies are healthier and are less prone to illnesses. How can you help? All that is needed is:

- A clean and private room (not a bathroom or toilet) or a screened-off area as illustrated below.
- Giving the worker some extra free time for breastfeeding with pay or daily reduction of working hours.
- Managers and co-workers who understand the programme and support it.

The breastfeeding area does not need to be a fancy space. A weather-protected, screened area that's as quiet as possible, with a chair, a small table for changing a diaper, hand washing facilities, and access to drinking water is better than nothing at all.

Figure 7.2
A low-cost breastfeeding area that provides privacy and basic comfort for the breastfeeding mother

1 The internationally recommended duration is six months for exclusive breastfeeding and 2 years or beyond for continued breastfeeding, see World Health Assembly Resolution 55.15 (*Global Strategy on Infant and Young Child Nutrition*, 2002).

Paternity leave

This is leave for the father around the time of birth of the baby and is an important arrangement to help the father bond with his new child and promote equal sharing of family responsibilities between women and men. Paternity leave is becoming more and more common in national law and in organizational practice, particularly in collective bargaining agreements, reflecting the increasing importance attached to the role of the father. Among the countries where information is available, paternity leave ranges from one day to three months and it is usually paid leave.

Figure 7.3
Many fathers appreciate having time off to be with the new baby

Parental leave

Parental leave refers to a planned longer-term leave available to either parent to allow them to take care of an infant or young child over a period of time usually following the maternity or paternity leave period. As provided in the ILO Recommendation on Workers with Family Responsibilities, 1981 (No. 165), both the mother and the father should have a right to take parental leave.

Temporary arrangements for flexible working time

Checkpoint 7.3 reviewed a number of possibilities for flexible working time arrangements. Employers should also consider agreeing to temporary arrangements for parents with a new baby, to help with check-ups, immunization, breastfeeding and other short-term needs.

Child care arrangements

Provide child care facilities, or help workers find child care near work, so that if they wish to they can quickly get there and feed their child, during the working day or at the end of it (see Checkpoint 7.4).

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Module 8:

Selecting, storing, and managing equipment and supplies

The smooth and effective running of service delivery depends on selecting and ordering the right equipment and supplies, storing them appropriately, overseeing their use and maintenance, and keeping track of stock. These shouldn't be treated as separate tasks –whether it's a matter of medication, uniforms, or machines– but as part of an integrated system.

Careful planning is needed to avoid running out of essential supplies, or having too much stock, which ties up resources. Many health supplies are specialized products, and provision needs to be made for their correct storage to ensure that stock does not expire or get spoilt. In a 2010 inventory of five hospitals in the United Kingdom, out-of-date medical supplies were found on the shelves of all of them, and in the case of one in particular, some sterile medical supplies had expired in 2002 (Haspel, 2010). Equipment makes up a large part of the health service budget, and significant cost savings can be achieved through better control of stock.

See Factsheet 8.1 in the Trainers' Guide for a fuller case study.

The **objectives** of this module are:

- To examine and evaluate each part of the process by:
  - assessing needs;
  - selecting appropriate equipment and supplies;
  - organizing storage and stock management;
  - ensuring staff know how to use equipment and handle storage and stock control.
- To make the connections between the different parts of the process and show how an integrated system can improve flow and efficiency.

Adapting the module to your situation

Health facilities vary enormously not only in size and resources but in systems of procurement and management of stock. Your workplace may be supplied through a centralized procurement system or through an outside agency. Even so, you have the right to specify your needs and give clear feedback about the quality, usefulness, and timely delivery of items. In either case, stock-taking should be organized so that needs are identified well in advance in order to avoid interruptions in supply.

Checkpoints for Module 8

8.1	Plan for the needs of all units in relation to equipment and supplies
8.2	Select the safest and most appropriate equipment available and affordable
8.3	Provide secure, safe and clearly-labelled storage space for all items used
8.4	Have in place a system for stock-taking and maintenance, including hazard control
8.5	Provide staff training on the safe use and maintenance of equipment, especially new products or models

Checkpoint 8.1

Plan for the needs of all units in relation to equipment and supplies

WHY?

- Timely planning means you have an uninterrupted supply of the materials and equipment needed in order to provide essential services.
- Planning an *integrated* system that covers needs assessment, budget allocation, selection, storage, stock-taking, and handling supervision reduces waste, improves efficiency and supports quality healthcare.
- Involving the staff who use the various items helps build a clearer picture of needs and gaps –including training needs in the handling or maintaining of certain items– and brings a sense of ownership which encourages responsible and informed use.

HOW?

> ***Note:***
> These steps should be followed even if your facility does not directly handle procurement or control budget allocation; you should still assess your needs and make them known clearly and in good time; give immediate feedback if supplies are interrupted or not fit for purpose; and resist being supplied with poor quality or unsafe items. It is good to keep informed about products and prices so that you can argue for appropriate supplies.

1. The first step in planning is to *assess needs and identify gaps*. It is essential to consult all the staff who use the supplies and equipment; and useful to go to their work stations where you can observe how the items are used. The manager or team responsible should speak to staff at their work stations and verify:

   - what items are used and what condition they are in;
   - where different or additional equipment would improve efficiency;
   - bottlenecks or delays in accessing, handling or transporting items;
   - whether items are used correctly and confidently.

   These points can be turned into a short standard questionnaire to help gather the necessary information.

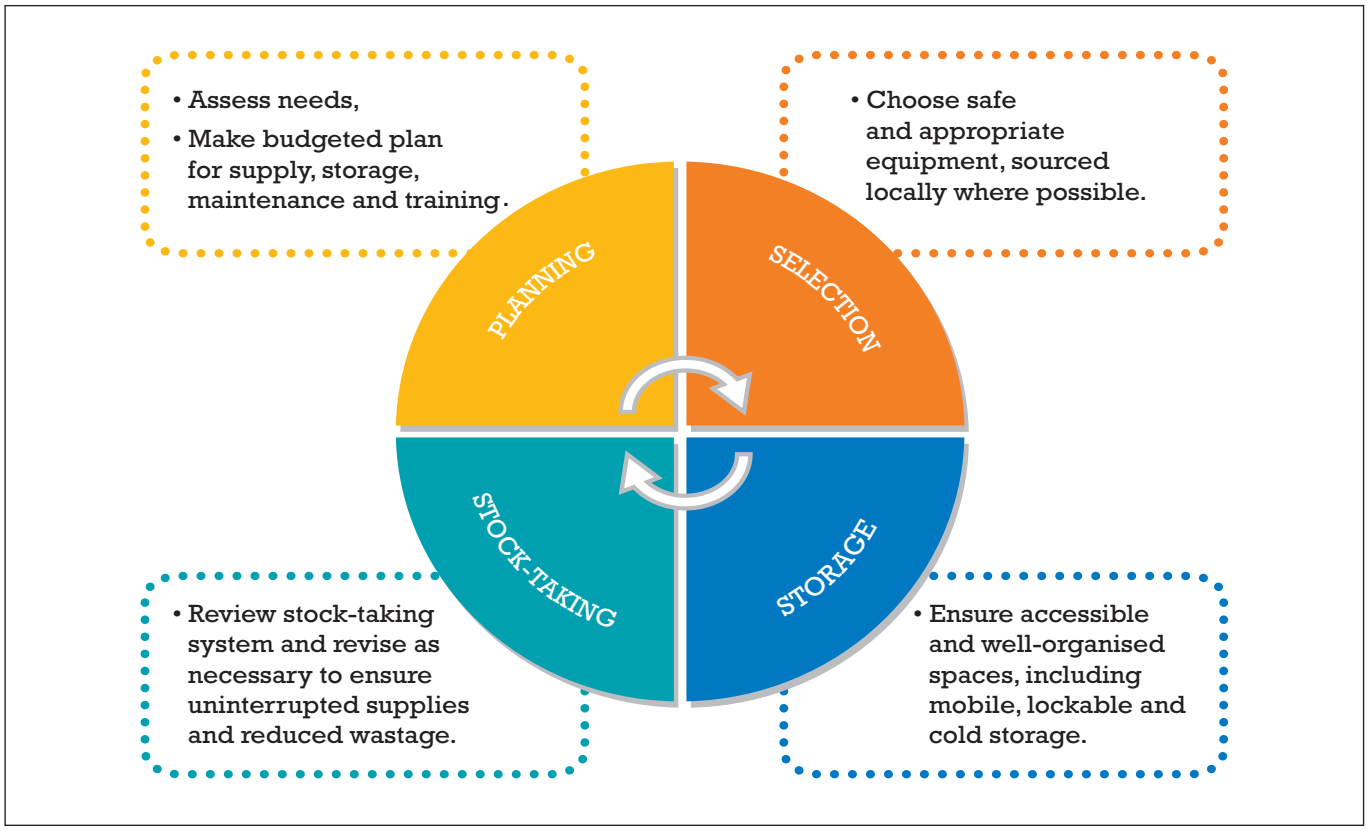
2. Use the information obtained about needs, gaps, access, and handling as the basis for the *integrated supplies and equipment plan*. Give the highest priority to safety concerns –whether it's the lack of a key item, hazardous equipment, or the need for further training. Then prioritize the other needs according to the policy and regulations of your workplace.

3. You should also make sure that there is *regular reporting on stocks and equipment*, so that 1) when supplies reach a specified minimum level the person responsible for ordering is alerted, and 2) if machines or equipment start to age or malfunction there is also an alert.

4. The plan should be completed by a *review and revision* of storage, stock-taking and *training*.

See Factsheet 8.2 in the Trainers' Guide for three questionnaires covering logistics management, inventory control, and storage.

Figure 8.1
An integrated system for managing supplies and equipment



Checkpoint 8.2

Select the safest and most appropriate equipment available and affordable

WHY?

- The lack of essential and/or appropriate tools or supplies can result in poor service delivery, low staff morale, or even injuries to patients and health workers. It can also waste scarce funds.
- The careful selection of equipment and supplies, with inputs from the staff who use them, ensures that material is fit for purpose and gives value for money.

HOW?

1. Based on the assessment of needs and gaps, *plan to meet these in stages*, starting with those most urgently needed.

2. Before starting item selection, check through *existing stock*.

3. Look at *alternative options for the supply* of basic items as this can save money and time over the long run. To help you identify reliable suppliers consult other health facilities, if possible. Look into cost-saving opportunities such as bulk buying, as long as there's storage space, and at after sales service where relevant. See if you can source some supplies locally –this can save money and reduce the environmental cost of your hospital or clinic (see Module 5).

4. *Equipment safety* depends on selecting safe equipment to purchase, storing it safely, and ensuring that the staff who use it are trained correctly. Make sure you have a manual for the equipment with operating instructions in the language used by the staff; the equipment must be used only for its intended purpose; and an agreed maintenance plan should be in place, including regular checks, especially for emergency care equipment (see Checkpoint 8.4). If faulty functions are detected, take immediate action to repair or replace.

Emergency care equipment should be checked daily and signed off on a register to ensure proper functioning in emergencies. For example, check the effectiveness of infusion and syringe pumps, alarms, monitors, and ventilators.

Note: Even if you don't directly place the orders, you can take the same steps to inform the procurement agency in a systematic way about the quality and appropriateness of supplies. Make sure that specified staff are responsible for reporting on the quality and safety of items, and that the procedures are known for making recommendations to the purchasing agency or procurement division.

See Factsheet 8.3 in the Trainers' Guide for the purchasing board guidelines (2007) of the Government of Victoria, Australia.

REMINDER

Procurement systems and stock-taking may be abused in a number of ways, including:

- Favouritism to suppliers and contractors
- Influences on procurement (gifts, bribes)
- Failure to check contractor skills and qualifications and monitor quality/ performance
- Failure to obtain the best price for supplies and equipment
- Failure to pay invoices on time
- Insufficient contract management.

To avoid these, apply the following principles:

- Fairness and impartiality
- Use of open, competitive processes
- Consistency and transparency of process
- Identification and resolution of conflicts of interest
- Compliance with legislative obligations and government policies

(State Government of Victoria, Australia, 2013).

Checkpoint 8.3

Provide secure, safe and clearly-labelled storage space for all items used

WHY?

- Well-planned storage:
  - reduces waste and possible deterioration;
  - improves accessibility and reduces delays;
  - enables easier and more efficient stock-taking; and
  - reduces the risk of strain and accidents.

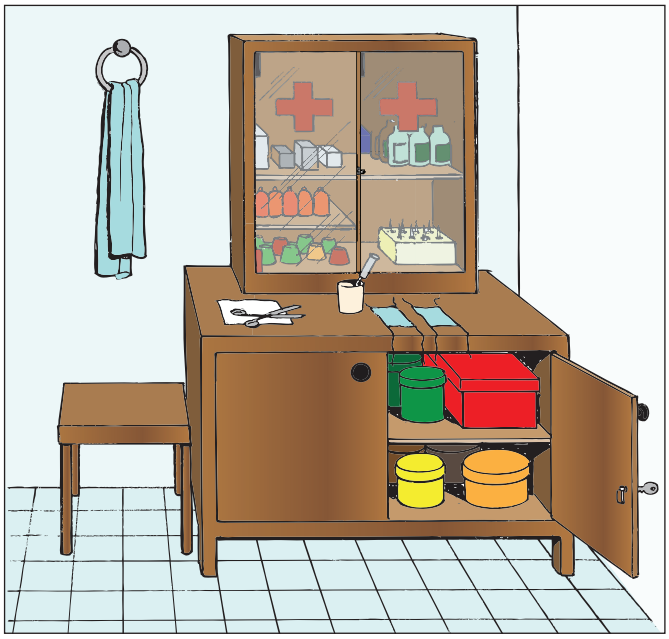
HOW?

1. *Storage is organized* so that specific space is allocated to each type of item, and in appropriate containers (closed or locked where necessary for safety). Use multi-shelf units, with heavier items at the bottom and safe means to reach items at the top. Seek advice from specialists, if possible, on security and the risk of external and internal theft.

   It's not necessary to use costly containers. The *Centre Hôspitalier Régional* in Banfora, Burkina Faso, redesigns used cardboard boxes for storing documents and patients' files. The boxes are reinforced with transparent tape and have clear labels to describe the purpose of each box (Ministry of Health and Social Welfare of Tanzania; Japanese International Cooperation Agency, 2009).
   Separate potentially harmful products (e.g. keep cleaning products away from pharmaceutical supplies), and keep items used most often nearer to the door or work station; take into account legal requirements, if any. Arrange items by expiry date so that older supplies are used first: 'first in, first out' (see Checkpoint 8.4).

2. *Refrigeration.* Some medication and blood products require refrigeration. The medical refrigerator should not be allowed to hold any food or drinks. Arrange for the daily monitoring of temperature levels.

Figure 8.2
Lockable medication cupboard



3. *Label supplies,* especially medication and chemicals, so that they can be seen easily and identified quickly.

Figure 8.3
Storage and labelling

4. *Mobile storage*. Easy access to items saves time, and on occasion, saves lives. It is useful to have mobile equipment, such as trolleys or containers, that move several items at once. This helps ensure that the supplies and equipment needed most often, or in an emergency (e.g. defibrillator) are at, or close to the work station. It also reduces physical strain, increases ease and speed of access, and improves efficiency.

   Example: a holder for used (but uncontaminated) linen can be attached to a trolley with shelves containing clean linen. This allows staff to deal with used linen without putting it on the floor or carrying it against their uniforms. The design of the trolley is important to ensure that the clean and dirty linen do not get mixed.

5. *Clear passages*. Make sure that the passageways where people, trolleys, or push carts have to pass are kept free of obstacles which could delay progress or cause an accident.

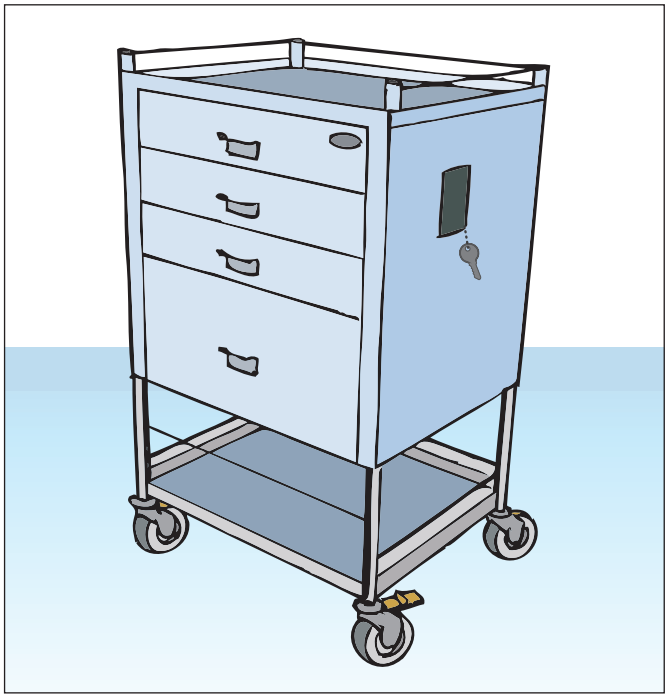
Easy access to necessary supplies

Consider the situation in a hospital where the linen is stored outside the ward, around several corners, in a locked store room. Staff have to make frequent trips to get clean linen during a working day. A long walk wastes time, is tiring, and there is the risk that staff may leave the linen room door open to save time.

As a first step towards efficiency is a trolley, which could be used to place the clean linen for use in the patient care area. The trolley should have shelves for different types of linen and a bag attached to it for placing used linen in it. In best practice a separate trolley would be allocated for dirty linen with a holder for alcohol hand rub and products used for 'back and pressure sores' care. Ideally you would want to move the linen storage to a room in the ward and nearer to the patient care area, but this is not always feasible.

6. *Storage for patients' possessions*. Patients have storage needs too! Provide storage at the bedside for patients' belongings. Furniture may be costly, and space may be at a premium, so consider low-cost alternatives. The *Centre Hôspitalier Régional* in Banfora, Burkina Faso, purchased plastic baskets for this purpose. The baskets are much cheaper than any other bedside furniture and easy to get at the local market. Patients also keep their pans and dishes in the basket (Ministry of Health and Social Welfare of Tanzania; Japanese International Cooperation Agency, 2009).

Figure 8.4
Mobile storage



Trolleys with lockable cabinet for medication rounds: eases the distribution of medication, ensures safe-keeping of drugs, and contains the necessary medication register for recording drug use.

Trolleys with gas cylinders: make it possible to move heavy weights without strain and when stored accessibly help ensure that equipment is ready for rapid use.

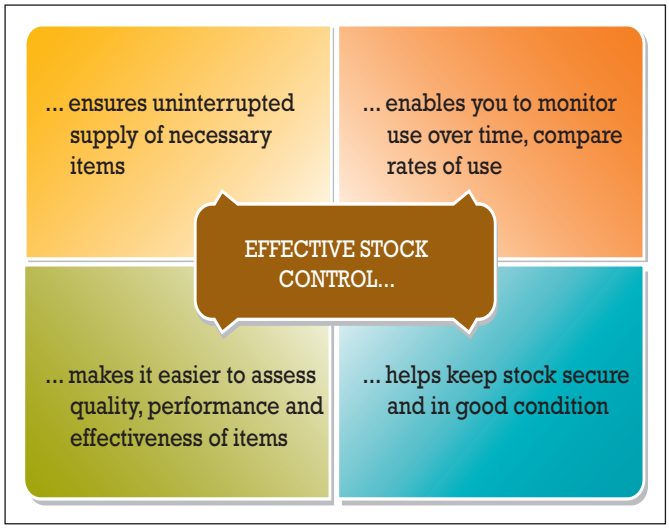
Checkpoint 8.4

Have in place a system for stock-taking and maintenance, including hazard control

WHY?

- Stock is not just about quantity but also quality control, safety, and maintenance. Proper stock-taking makes it easier to plan timely and appropriate ordering. It supports quality control and helps to avoid waste and save money.

Figure 8.5
The benefits of a comprehensive system for stock control and management



HOW?

Note: Even if you use an external procurement agency, and/or stock control is part of a central computerized system, implementation and monitoring still need to be carried out at your own workplace.

1. Before reviewing your stock-taking policy or system, *check what stocks are on site*, whether they correspond to the needs you've identified (Checkpoint 8.1), and whether all supplies and equipment are in use and not expired – *dispose of any unnecessary or out of date items.*

2. Use the same *categories* for stock-taking as you do for storage.

3. Decide whether you have the resources (human and financial) for *manual or computerized stock control* (also called inventory control).

4. Assess the *minimum and maximum numbers of each different type of stock needed* for continuity of service delivery: when the minimum is reached, it's time to re-order.

   If some needs are predictable, you may order a *fixed quantity of stock* every time you place an order, or order at a fixed interval, for example every week or month. In effect, you're placing a standing order, so you need to keep the quantities and prices under review.

   Note: This only applies directly if your workplace is responsible for its own ordering, but you could still make the suggestion to the procurement agency if you believe it would help ensure timely and regular delivery.

5. Have in place *a maintenance and emergency plan* covering all tools and equipment, including a system for regular inspections. The plan should include identifying possible hazards linked to an item (e.g. sharp corners at ankle height or wheels without a guard) and the action needed to eliminate them – this may include replacing an item with a safer alternative. See Modules 1, 2, 3, and 5 for a more detailed discussion of hazards.

REMINDER

Each type of equipment has potential hazards and different needs for safe usage, check national requirements for the management of medical equipment (see Module 1).

Refer to ISO 13485, published in 2003, for the management of medical devices at International Organization for Standardization's website: http://www.iso.org/iso/home.html

See in the Trainers' Guide for Factsheets 8.4 on options for stock control, 8.5 on stock controller duties, and 8.6 for an equipment maintenance schedule.

Checkpoint 8.5

Provide staff training in the safe use and maintenance of equipment, especially new products or models

WHY?

The correct use of equipment means it will work better and last longer, hazards will be reduced and accidents averted, and money will be saved.

HOW?

1. Put in place a training plan that applies to:

- new staff who have to handle specialized tools and equipment;
- existing staff who have to be re-trained when new and different items are introduced; and
- existing staff returning after a long absence (e.g. sick leave).

Training should cover handling, maintenance, cleaning and inspection.

2. Use different types of training, formal and informal, including mentoring.

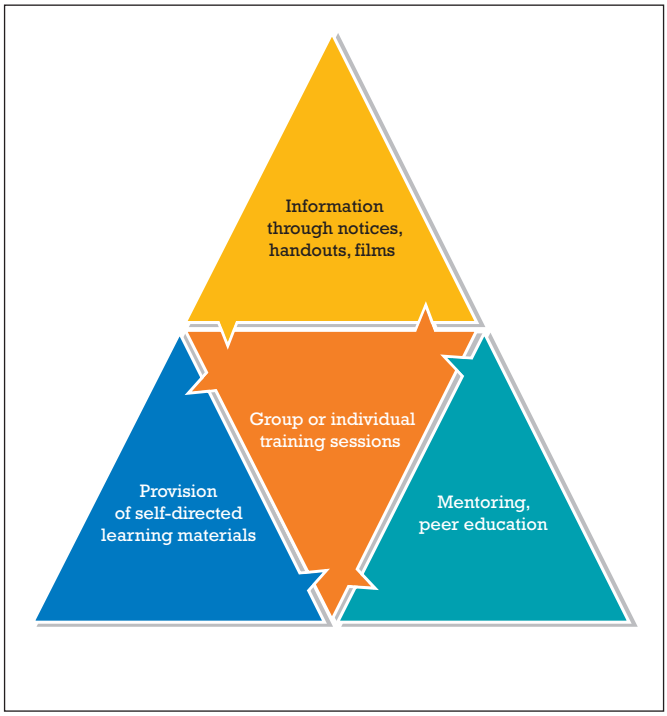
3. Support training by making sure that equipment is placed together with the instructions necessary for safe and efficient handling. Use notice boards and appropriate wall spaces for useful information and reminders.

4. Even if you have specialized cleaning staff, make sure that all staff are aware of the importance of keeping equipment, work areas, and storage spaces clean and hygienic. Designate a responsible officer to support and check cleanliness in each work station.

REMINDER FOR STORAGE AND MAINTENANCE

- Create a storage space for each item, link to stock control system, label clearly
- Remove unnecessary items
- Separate potentially harmful products (explosives, flammables, etc.)
- Keep frequently-used equipment nearby, use mobile storage
- Purchase the safest and best quality equipment
- Check regularly for effective functioning and safety
- Assess all potential hazards and eliminate or manage them appropriately
- Use protective guards on sensitive and emergency equipment

Figure 8.6
Different training approaches which reinforce each other to promote staff learning



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HEALTHWISE GLOSSARY- ACTION MANUAL:

Abuse	Behaviour that humiliates, degrades, or otherwise indicates a lack of respect for the dignity and worth of an individual.
Accident	*See occupational accident*
Airborne pathogens	Disease-causing agents that spread infection through mechanisms such as droplets or dust.
Assault/ attack	Behaviour intended to hurt or harm another person physically, including sexual assault.
Biological hazards/ biohazards	Infectious agents or hazardous biological materials that present a risk or potential risk to the health of humans, animals or the environment. The risk can be direct through infection or indirect through damage to the environment.
Bloodborne pathogen	Hazardous microorganisms present in human blood capable of causing diseases in humans.
Breastfeeding arrangements	This involves making (simple) arrangements to help workers breastfeed or express milk to save for later feeding at the workplace.
Bullying/mobbing	Repeated vindictive, cruel, or malicious attempts to humiliate or undermine an individual or groups of employees.
Cash and medical benefits for maternity leave	The right to cash benefits during maternity leave and health care related to pregnancy, childbirth, and the postnatal period.
Compressed work week	A system that allows for the rearrangement of working time into fewer but longer shifts. This results in shorter workweeks.
Contamination	In the health-care context, contamination is the presence of a potentially infectious or hazardous agent on a surface, on or in materials, and substances; this includes, for example, the presence of blood, body fluids and other potentially infectious materials on an instrument or on a surface.
Controls (administrative)	The use of administrative measures (i.e. policies and procedures and enforcement measures) to reduce the risk of exposure to pathogenic organisms or other occupational risks.
Controls (engineering)	Controls that isolate or remove a hazard from a workplace. They may include the use of appropriate mechanisms, methods and equipment to prevent worker exposure.
Controls (Workpractice)	Practices incorporated into the everyday work routine that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g. prohibiting recapping of needles by a two-handed technique).
Discrimination	It entails treating people differently because of certain characteristics, such as race, colour or sex, which results in the impairment of equality of opportunity and treatment. Discrimination results in and reinforces inequalities.

Employment protection and non-discrimination for pregnant women (the right to return to work)	Guarantee of the woman's employment security and the right to return after her maternity leave to the same job or an equivalent one with the same pay. Moreover, a woman cannot be discriminated against while at work or while searching for work because of her reproductive role.
Ergonomics	The study of the interrelationship between humans, the tools and equipment they use in the workplace, and the environment in which they work.
Exposure	Work-related situation, condition or activity that puts the worker in contact with a potential occupational hazard.
Family-friendly (workplace measures)	Practices that facilitate the reconciliation of work and family life, and are introduced to complement statutory requirements.
Family responsibility	Family responsibility encompasses more than working mothers or fathers caring for children; it also includes any worker caring for another family member for example, single adults caring for aunts or uncles, or adult siblings taking care of each other.
Flexitime	Formal flexitime programmes allow workers to vary their starting and ending times and, in some cases, even the number of hours that they work in a particular week. Generally, flexitime programmes involve establishing a period of ''core'' hours when all employees are required to be at work (e.g. 10:00-16:00); however, some programmes operate with no core hours at all.
Green hospital/ health-care facility	The word 'green' is used to describe actions that make health services more environmentally-friendly, safer, and healthier for staff and patients, as well as more energy-efficient and less wasteful.
Harassment	Any conduct based on particular characteristics of the victim (for example age, gender, race, religion, disability, sexual orientation, HIV status etc.) that is unreciprocated or unwanted and which affects the dignity of men and women at work.
Hazard	The source or potential source for harm or adverse effect on the health of an employee or patient; anything which may cause injury or ill health to anyone at or near a workplace is a hazard.
Hazard control	Measures or actions to eliminate or reduce hazards.
Hazard management	The structured process of hazard identification, risk assessment and control aimed at providing a safe and healthy environment for employees and patients at the workplace. Note: more common is the use of the terms hazard control and risk management.
Hierarchy of hazard controls	A method of prioritizing strategies and measures to control occupational health hazards listed in order of effectiveness: elimination; substitution; engineering controls; administrative controls; work practice controls and personal protective equipment.
Healthy work-life balance	The extent to which an individual is equally engaged in -and equally satisfied with his or her work role and family role. Work-life balance consists of three components: - time balance refers to equal time being given to both work and family roles; - involvement balance refers to equal levels of psychological involvement in both work and family roles; - and finally, satisfaction balance refers to equal levels of satisfaction in both work and family roles.

Hours averaging/ annualized hours	Schemes that allow variations in weekly hours of work, while requiring that a fixed annual total or a weekly average of working hours be reached. Further, variations in weekly hours must respect established minimum and maximum limits on daily and weekly hours. So long as these limits are respected, as well as the annual total or weekly average, no overtime premium is payable for hours worked beyond the statutory ''normal hours''.
Incident	An unsafe occurrence resulting out of, or in the course of work, where no personal injury is caused, or where personal injury requires only first-aid treatment.
Inspections (workplace)	Structured and formal evaluation of workplaces to assist with the identification of hazards, assessment of risks and monitoring of implementation and compliance of health and safety policies.
Job sharing	A voluntary arrangement whereby two persons take joint responsibility for one full-time job and divide the time they spend on it according to specific arrangements made with the employer.
Maternity leave	A woman's right to a period of rest from work in relation to pregnancy, childbirth and the postnatal period.
Musculoskeletal disorders	Injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and supporting structures of the upper and lower limbs, neck, and lower back that are caused, precipitated or exacerbated by sudden exertion or prolonged exposure to physical factors such as repetition, force, vibration, or awkward posture.
Occupational accident	Unexpected and unplanned occurrence, including acts of violence, arising out of or in connection with work which results in one or more workers incurring a personal injury, disease or death.
Occupational disease/ illness	Any disease contracted as a result of an exposure to risk factors arising from work activity.
Occupational injury	Any kind of personal injury, disease, or resulting death from an occupational accident.
Paid leave	Annual period during which workers take time away from their work while continuing to receive an income and to be entitled to social protection.
Paid sick leave	Compensated working days lost due to sickness of workers.
Paternity leave	Employment-protected leave of absence for employed fathers at the time of childbirth. In general, periods of paternity leave are much shorter than for maternity leave. Because of the short period of absence, workers on paternity leave often continue to receive full wage payments.
Parental leave	Employment-protected leave of absence for employed parents, which is often supplementary to specific maternity and paternity leave periods), and usually, but not in all countries, follows the period of maternity leave. Entitlement to the parental leave period is either for each parent or for the family, but entitlement to public income support is often family-based, so that in general only one parent claims such income support at any one time.
Part-time work	When an employed person's normal hours of work are less than those of comparable full-time workers.
Precautions (standard)	A set of measures designed to reduce the risk of bloodborne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients.

Post-exposure prophylaxis	An immediate short-term provision of antiretroviral treatment to reduce the likelihood of HIV infection after potential exposure.
Reporting	Procedure specified by the employer in accordance with national laws and regulations, and in accordance with the practice of the enterprise, for the submission by workers to their immediate supervisor, competent person, or any other specified person or body, of information on any occupational accident or injury to health which arises in the course of or in connection with work; suspected cases of occupational diseases; commuting accidents; and dangerous occurrences and accidents.
Residual risk	The remaining level of risk after all risk treatment measures have been taken.
Risk	A combination of the likelihood of an occurance of a hazardous event and the severity of the injury or damage that the event causes to the health of people or to property.
Risk assessment	The process of evaluating risks to workers' safety and health from workplace hazards. It is a systematic examination of all aspects of work that considers the likelihood of an occurance of a hazardous event and the severity of the injury or damage that the event causes.
Rotas	Systems that show the order in which people take their turn to perform certain duties (they are different from shifts which may be fixed or rotating).
Staggered hours scheme	A system where workers or groups of workers start and finish work at slightly different times. A staggered hours system may allow workers some discretion, within prescribed limits, in fixing the time when they start and finish work. However, once these starting and finishing times have been chosen (or fixed by the employer), they remain unchanged.
Sterilization	A physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.
Stigma	Describes reactions to or feelings about a group or individual on the basis of certain characteristics, be it their sex, colour, religion, health status, sexual orientation, or some other quality. Very often it results from a lack of understanding –including false information and misconceptions, fear of the unknown, or simply because of intolerance.
Task shifting	Making more efficient use of the human resources currently available through a process of delegation whereby tasks are moved, where appropriate, to less specialized health workers.
Threat	Promised use of physical force or power (i.e. psychological force) resulting in fear of physical, sexual, psychological harm or other negative consequences to the targeted individuals or groups.
Time banks or time savings accounts	The concept of ''time banking'' or working time accounts involves keeping track of hours worked in ''accounts'' for individual workers. Like some flexitime programmes, time banking permits workers to build up ''credits'' or accumulate ''deficits'' in hours worked, up to a maximum amount; however, the periods over which the ''credits'' on ''deficits'' are calculated are much longer, ranging from several months to a year or more.
Toxic substances	Chemicals present in the workplace which are capable of causing harm. In this definition, the term chemicals includes dusts, mixtures, and other materials such as paints, fuels, and solvents.

Violence (physical)	The use of physical force against another person(s) which results in physical and/or psychological harm. Examples are pushing, pinching, beating, kicking, slapping, stabbing, shooting, and rape.
Violence (psychological)	The intentional use of power, including threat of physical force, against another person or group that can result in harm to physical, mental, spiritual, moral or social development. It includes verbal abuse, bullying/mobbing, harassment, and threats.
Violence (workplace)	Any action, incident or behaviour that departs from reasonable conduct in which a person is assaulted, threatened, harmed, injured in the course of, or as a direct result of, his or her work; this extends to all places where workers need to be or to go by reason of their work and which are under the direct or indirect control of the employer.

HealthWISE Action Manual

Health services are complex work environments, which can at times be hazardous. Unsafe working conditions may lead to attrition of the health workforce. Decent work in the health sector must include workers' health and well-being, since the quality of the work environment can influence the quality of care provided by health workers.

HealthWISE – a joint ILO/WHO publication – is a practical, participatory quality improvement tool for health facilities. It encourages managers and staff to work together to improve workplaces and practices. HealthWISE (Work Improvement in Health Services) promotes the application of smart, simple and low-cost solutions leading to tangible benefits for workers and health services, and ultimately for patients. The topics are organized in eight modules addressing occupational safety and health, personnel management and environmental health issues.

HealthWISE combines action and learning. The Action Manual helps initiate and sustain changes for improvement, using a checklist as a workplace assessment tool, designed for identifying and prioritizing areas of action. Each of the eight modules illustrates key checkpoints to help guide action. The Trainers' Guide contains guidance and tools for a training course and is accompanied by a CD-ROM, which includes a sample PowerPoint presentation for each of the training sessions.

HealthWISE is designed for use by all who are concerned with improving workplaces in the health sector, including health workers and health-care managers, supervisors, workers' and employers' representatives, labour inspectors, occupational health specialists, trainers and educators.

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