MODULE 12 | BUILDINGS, UTILITIES, WASTE AND WORKPLACE SAFETY

Workplace Safety, Fire Prevention and Safe Evacuation

Practical hospital governance in Punjab, Pakistan

51

LECTURE

Protect people during routine work and emergencies.
Turn safety plans into actions that staff can perform.

AUTHOR

Dr Qurban Hussain Khan

Edition 1.0 | 5 October 2026

SELF-STUDY PDF

Make workplace safety a functioning system

For the Medical Superintendent (MS): protect staff, patients, contractors and visitors through clear duties and checked controls.

- Identify the rules and responsible people.
- Reduce workplace risks and act on unsafe conditions.
- Check fire readiness and evacuation plans.
- Test the plan and verify that defects are corrected.

OFFICIAL SOURCE

A principle tied to a named law, standard or official guidance.

WORKING METHOD

A practical control or teaching format to adapt to the authorised system.

TEACHING CASE

An invented hospital example, used to practise applying the correct process.

Study output

A safety review with evidence, actions, owners and a tested emergency plan.

Module 12 | Presentation 3 of 3. Allow 45-60 minutes with exercises. All explanations are on the pages; check the cited sources before live use.

Keep the different requirements together

A hospital may be subject to several safety requirements at the same time.

Source	What to establish
Punjab healthcare standards	Punjab Healthcare Commission (PHC) hospital standards and inspection findings.
Building and fire requirements	The relevant building authority, fire code, Rescue requirements and certificate conditions.
Occupational and service law	Current law, coverage of the institution and worker category, notification routes and duties.
Technical guidance	Use official guidance to design controls; identify it separately from a legal requirement.

An internal safety policy implements responsibilities; it cannot remove duties imposed by the governing law.

Sources: **S1**: indicators 126-129 | **S2**: sections 2-4 | **S13**: current applicability

Check which occupational-safety law is in force

A published new Act and its commencement can be different events.

Before citing a duty

- The Punjab Labour Code 2026 is published. Section 1(3) ties commencement to a Government notification in the official Gazette.
- Check commencement, transitional provisions and the coverage of the hospital and worker category before using the 2019 or new framework.

Keep protection in place

- Maintain a named safety lead, worker consultation, risk controls, training and access to occupational health support.
- Record the exact legal basis for mandatory notices, inspections and reporting deadlines; obtain an authoritative clarification if needed.

Do not assume that civil-service status, a contract appointment and outsourced employment have identical legal treatment.

Sources: **S13**: commencement and applicability | **S5**: facility safety programme

Check the building before citing the certificate rule

The Punjab Community Safety Act 2021 uses a specific definition of a covered building.

Scope in the Act

- Section 2(a) refers to an occupied floor more than 50 feet above the building's lowest level.
- Check the actual building and current law with the competent authority. A roof height alone does not settle the test.

Duties for a covered building

- Section 3 provides for application, inspection and a one-year Safety Measure certificate, subject to renewal.
- Section 4(2) requires a qualified safety manager with the specified health and safety certification.

Other fire, building and PHC obligations still require review even where this particular definition is not met.

Sources: **S2**: sections 2(a), 3 and 4(2) | **S3**: current regulations

Assign duties for every shift

Suggested responsibility map: confirm the formal appointments and powers in your hospital.

Role	Operational responsibility
Hospital leadership	Provide resources, decide service restrictions and escalate unresolved serious risks.
Safety and technical leads	Assess hazards, arrange competent tests and maintain fire and building-safety records.
Department and shift leads	Check their area, brief staff, maintain access and report unsafe conditions promptly.
Occupational health, IPC and HR	Coordinate staff protection, exposure care, training and lawful follow-up.
All workers and contractors	Use agreed controls, report hazards and follow emergency instructions.

IPC means infection prevention and control; HR means human resources. A named lead needs an identified deputy.

WORKING METHOD | Illustrative material is identified in the text.

Assess the task before deciding the control

Suggested local method for a ward, laboratory, plant room or maintenance activity.

1	**Identify**	Describe the hazard, location, task and the people who could be harmed.
2	**Assess**	Consider likely harm, exposure and existing controls, including night shifts and contractors.
3	**Control**	Remove the hazard where possible; otherwise reduce exposure with effective controls.
4	**Verify**	Record the owner, deadline and interim protection; inspect again before closing the action.

A colour or score helps set priorities. It does not justify leaving an immediate danger unprotected.

WORKING METHOD | Illustrative material is identified in the text.

Use stronger controls before relying on behaviour

The hierarchy of controls is a technical method for choosing preventive action.

Control	Plain meaning	Hospital example
Eliminate	Remove the hazardous activity.	Remove an unnecessary hazardous step.
Substitute	Use a safer option.	Select a less hazardous suitable chemical.
Engineer	Separate people from the hazard.	Provide suitable ventilation or a guard.
Organise	Change the way work is managed.	Control access and supervise the task.
Protect	Use personal protective equipment.	Choose task-appropriate gloves or eye protection.

Several controls may be needed together. Personal protective equipment must fit the hazard and be used correctly.

Sources: **S6**: hierarchy of controls

Prevent infection and respond to exposure

A cleaner, trainee or contractor may face the same exposure as a clinical employee.

Prevention

- Arrange infection-control training, suitable protective equipment, safe sharps disposal and an occupational immunisation programme.
- Provide an accessible exposure-response route at all hours; staff should know who can assess them.

After a sharps or splash exposure

- Give immediate first aid under the exposure protocol and arrange urgent medical assessment. Do not wait for an inquiry.
- Record the time, task and device; protect confidentiality and ensure clinically indicated follow-up.

The MS ensures timely access to qualified care. Testing and preventive treatment require the current clinical protocol.

Sources: **S7**: occupational infections | **S8**: immediate care and reporting

Control chemicals and physical hazards

Suggested checks for clinical areas, stores, laundries, laboratories and workshops.

Chemicals

- Keep an inventory, labels and accessible safety data sheets. Separate incompatible substances and limit unnecessary stock.
- Use approved ventilation, spill arrangements and trained responders. Do not mix cleaning agents without an approved procedure.

Physical exposures

- Review heat, noise, radiation, machinery and electrical hazards with competent specialists.
- Use the required shielding, monitoring, guards and authorisations. Restrict unsafe equipment and work areas.

A safety data sheet explains a product's hazards and handling precautions; staff must know where to find it.

Sources: **S7**: chemical and physical hazards

Make patient handling and movement safer

Suggested controls based on the actual task, patient and environment.

Handling patients and loads

- Assess assistance, suitable lifting or transfer aids and staff competence before a difficult movement.
- Keep equipment available and maintained. A training certificate alone cannot make an unsafe load safe.

Prevent falls and other injuries

- Repair damaged floors, control wet surfaces and keep routes clear. Check lighting, cables and storage.
- Plan safe access to roofs, tanks and plant areas. Height and confined-space work need competent assessment and control.

Include ambulance movement, loading areas and delivery routes in the workplace risk review.

Sources: **S7**: unsafe handling and injuries

Address violence, harassment and fatigue

Work organisation and staff protection belong in the safety review.

Violence and harassment

- Provide a clear route to summon help, safe reporting and access to appropriate care and support.
- Preserve evidence, protect privacy and use the applicable complaint or legal process; review access and security failures.

Workload and fatigue

- Review unsafe workload, missing cover, prolonged duty and missed rest opportunities through the roster process.
- Arrange workable cover and support, including night staff. Investigate repeated pressures rather than relying only on resilience training.

Immediate protection and fair fact-finding can proceed together; reporting a concern is not proof of misconduct.

Sources: **S9**: violence and psychosocial risks

Control hazardous contractor work

A permit to work is a recorded authorisation for a defined hazardous task and its safeguards.

1	**Before work**	Identify the task, competent workers, hazards, clinical impact and responsible hospital officer.
2	**Authorise**	Confirm required isolations, access controls, fire precautions and communication before starting.
3	**Monitor**	Control hot work, electrical work, work at height and confined-space work through appropriate specialist procedures.
4	**Hand back**	Inspect the completed area, restore systems safely and close the permit with a documented handover.

A signed permit is not evidence that the precautions were actually applied. Verify the site and the handover.

Sources: **S10**: permit systems

Report events and keep the evidence

Suggested response to an injury, dangerous condition or near miss.

1	**Protect people**	Arrange emergency care and prevent further exposure. Restrict unsafe work through the authorised response.
2	**Notify**	Use the immediate internal route and any applicable statutory reporting route; confirm who reports and by when.
3	**Establish facts**	Preserve records, photographs and witness accounts securely. Separate verified facts from assumptions.
4	**Improve**	Identify failed controls, assign corrective actions and check effectiveness; use a fair process for personal accountability.

A near miss caused no injury on that occasion. It can still reveal a serious weakness needing prompt action.

WORKING METHOD | Illustrative material is identified in the text.

Inspect the conditions that allow fire to develop

Suggested floor-walk checks to support the competent fire-risk assessment.

01 Ignition

Damaged wiring, unsafe appliances, smoking and uncontrolled hot work.

02 Fuel

Unnecessary packaging, waste, linen and flammable substances.

03 Oxygen

Leaks, poor storage or unsafe work near oxygen equipment.

04 Escape

Blocked routes, locked exits or failed emergency lighting.

05 Protection

Damaged fire doors, failed alarms or impaired protection systems.

06 Access

Obstructed approach for responders or inaccessible service controls.

Escalate immediate danger and apply interim protection while competent staff determine the permanent remedy.

Sources: **S4**: fire prevention and means of escape

Oxygen changes the consequences of a fire

Oxygen is an oxidising agent: it supports combustion, although oxygen itself does not burn.

Prevent an avoidable hazard

- Control ignition sources, combustible storage and unauthorised work around oxygen systems.
- Use trained staff, suitable equipment and safe cylinder storage and movement; follow manufacturer and technical instructions.

Protect the patient pathway

- Identify the areas served by each isolation point and the authorised personnel who may operate it.
- Plan a safe alternative oxygen supply and clinical support before a planned interruption; emergencies follow the approved response.

Do not shut a shared oxygen supply without considering the patients it serves and the emergency command arrangements.

Sources: **S11**: oxygen fire-risk guidance

Fire protection is a complete system

Have competent professionals confirm suitability for the building and its clinical use.

Part of the system	Evidence to inspect
Detection and warning	Alarm and detector tests, faults, coverage and the response to an alarm.
Doors and escape routes	Clear routes, functioning doors, signs and emergency lighting.
Firefighting provisions	Suitable extinguishers, hoses, water supply and any required installed systems.
Maintenance and defects	Inspection results, servicing, unresolved faults and interim measures.

Use the applicable code, authority directions and equipment instructions for testing intervals; do not invent one interval for all systems.

Sources: **S1**: indicator 126 | **S4**: fire protection systems

A certificate does not replace daily readiness

Different documents answer different questions.

Authority evidence

- PHC indicator 126 calls for a certificate from the relevant authority, Civil Defence or Rescue 1122, on equipment fitness.
- Check building certificates, conditions and renewal dates separately where the Community Safety Act applies.

Operational evidence

- Keep inspection and test records, open defects and the actual remedial action for each failed item.
- Reassess safety when layouts, doors, oxygen systems, occupancy or clinical services change.

A functioning extinguisher cannot compensate for a blocked escape route or an evacuation plan that staff cannot use.

Sources: **S1**: indicator 126 | **S2**: section 3

PHC requires a plan that can be used

The hospital manual separates emergency arrangements into four linked requirements.

Indicator	Required focus
126: Emergency provisions	Written arrangements for early detection, containment and abatement; relevant equipment and fitness evidence.
127: Safe exit plan	A displayed whole-hospital evacuation plan, roles, routes, destinations, transport and training.
128: Mock drills	Drills at least once in a year, covering different areas and shifts, with findings and follow-up.
129: Staff training	Training records and staff able to explain their own emergency role and the roles of others.

PHC indicator 128 is not permission to ignore a more frequent drill requirement under another applicable instrument.

Sources: **S1**: indicators 126-129

Name the functions before an alarm occurs

Suggested role map to adapt to the approved hospital response plan.

Function	What must happen
Raise and relay the alarm	Use the local alarm process; report the exact location and summon the relevant emergency service.
Lead the response	Activate the agreed command arrangements, obtain situation reports and decide protective actions.
Move and treat patients	Coordinate ward teams, clinical escorts, safe destinations and essential treatment.
Support responders	Control access, give building and hazard information and arrange authorised utility actions.
Account and communicate	Track people and patient destinations; update receiving teams and relatives through the agreed route.

Use locally verified contact numbers and deputies. Train staff to perform the role during nights, holidays and system downtime.

WORKING METHOD | Illustrative material is identified in the text.

Choose evacuation routes from the real building

The strategy must match the fire assessment, building design and patient dependency.

Horizontal movement

- Progressive horizontal evacuation means moving people to a protected area on the same floor, then further if needed.
- It depends on suitable fire compartments, protected routes, capacity and trained staff; an ordinary corridor is not a protected destination.

Vertical or whole-site movement

- Plan onward movement, transport and a safe receiving location when the agreed strategy requires it.
- Do not use an ordinary passenger lift during a fire; any designated evacuation lift use must follow its approved arrangements.

Competent fire and clinical teams must approve the local strategy. This lecture is not a building-specific evacuation instruction.

Sources: **S12**: healthcare fire design and evacuation

Plan for patients who cannot walk out

Suggested joint review by nursing, clinical, technical and fire-safety leads.

01 Dependency

Identify patients needing assistance, monitoring or life support.

02 People

Specify trained escorts and available support on each shift.

03 Equipment

Identify suitable evacuation aids and transport equipment.

04 Treatment

Plan essential oxygen, medicines, power and monitoring.

05 Destination

Confirm a safe receiving area with the capacity to continue care.

06 Handover

Transfer identity, clinical needs, records and responsibility together.

Include intensive care, operating theatres, children and people with disabilities in the approved plan.

WORKING METHOD | Illustrative material is identified in the text.

Track each patient through a movement

Suggested minimum record for a drill or a real evacuation.

1	**Identify**	Use the patient identifier and current location; protect confidentiality.
2	**Dispatch**	Record the time, destination, escort and essential clinical requirements.
3	**Receive**	The receiving team confirms arrival, condition and responsibility for ongoing care.
4	**Reconcile**	Account for everyone expected to move; investigate any missing confirmation immediately.

Keep a workable paper fallback. An occupied bed count is not a substitute for identifying each patient.

WORKING METHOD | Illustrative material is identified in the text.

Set the drill schedule from all applicable rules

The calendar must cover the requirements and the hospital's actual risks.

Minimum PHC expectation

- Indicator 128 requires at least annual mock drills involving different areas and shifts, with recorded observations and changes.
- Indicator 127 expects a tested plan; a mock evacuation of an area can test arrangements without moving every patient.

Applicable building requirements

- Check the current Community Safety Buildings Regulations and authority directions for the required drill frequency.
- Include contractors, new staff, night teams and the people given specific emergency duties; protect patients during exercises.

Retain the schedule, scenario, participants, findings and evidence that required corrective actions were tested.

Sources: **S1**: indicators 127-129 | **S3**: current evacuation and drill provisions

A drill ends only after the defects are addressed

Suggested exercise-control method, including a clear way to stop an unsafe drill.

1	**Prepare**	Define the scenario, objectives, observers, patient safeguards and exercise stop authority.
2	**Observe**	Check alarm recognition, decisions, route use, staff roles, communication and patient tracking.
3	**Debrief**	Record what worked and each defect, with its risk, owner, deadline and interim protection.
4	**Retest**	Verify the correction through inspection or a focused repeat exercise; report unresolved serious risks.

A signed attendance sheet confirms presence. It does not demonstrate a safe response.

WORKING METHOD | Illustrative material is identified in the text.

Use a dashboard that shows unresolved risk

Suggested measures: define the period, denominator and verification method.

Measure	What to report with it
Open serious hazards	Location, interim controls, owner and next decision.
Safety actions due	Number verified complete, overdue and not yet due.
Training coverage	People who can perform the required role, by area and shift.
System faults	Failed safety systems, operational effect and restoration evidence.
Drill findings	Problems corrected and retested; repeat failures needing leadership action.

Fewer reported incidents may mean safer work or poorer reporting. Examine the evidence before claiming improvement.

WORKING METHOD | Illustrative material is identified in the text.

TEACHING CASE

Calculate verified closure, not claimed closure

Invented example: 20 safety actions are due by the review date.

Reported position	Staff report that 16 of the 20 actions are complete.
Verification	A reviewer confirms 12 closures. Four claimed closures have no adequate evidence; four actions remain unfinished.
Correct calculation	Verified closure = 12 / 20 x 100 = 60%. Claimed closure is 16 / 20 x 100 = 80%.
Leadership decision	Eight of the 20 due actions remain unverified or incomplete. Examine risk separately: one serious open hazard can require immediate action.

An action awaiting verification remains open in this teaching method. This percentage is not a legal compliance score.

TEACHING CASE | Illustrative material is identified in the text.

TEACHING CASE

A blocked exit and an incomplete night response

Invented situation discovered during a night-shift safety walk.

Observation	A fire door is held open with a trolley; cartons obstruct the route. The night team cannot identify its receiving area.
Immediate response	Protect the route and arrange authorised corrective action. Confirm temporary patient protection and contact the responsible safety lead.
System questions	Why was storage allowed there? Did the night induction cover the evacuation role? Is the designated destination usable?
Closure evidence	Reinspect the route and door, verify staff understanding and test the corrected arrangements safely. Report recurring failures to leadership.

Clear photographs and a completed checklist support the record; the final test is whether the control works.

TEACHING CASE | Illustrative material is identified in the text.

Three decisions to practise

Write your answer and the reason before turning to the next page.

1. Applicability

The top of a roof is 55 feet high. No occupied floor is known to be above 50 feet from the lowest level.

Does roof height alone settle the Act's building definition?

2. Safety action

Eighteen actions are due. Fifteen are reported complete; only twelve have been verified.

What is the verified closure percentage?

3. Patient movement

The fire plan names an assembly point but gives no arrangements for ventilated patients.

What information and preparation are missing?

Use the legal definition, a clear denominator and the patient's actual care needs.

TEACHING CASE | Illustrative material is identified in the text.

Answers and reasons

Use the evidence, the calculation and the cited source.

1. Check the occupied floor and the applicable requirements

No. Section 2(a) uses an occupied floor more than 50 feet above the lowest level. Confirm the facts and current scope with the competent authority; other safety duties still need review.

2. Verified closure is 66.7%

12 / 18 x 100 = 66.7% when rounded to one decimal place. Six due actions are not verified closed. Review the seriousness of each open action separately.

3. Specify how safe care will continue

The plan needs trained escorts, suitable movement aids, essential oxygen, power and monitoring, a capable receiving area, transport, patient tracking and clinical handover. Test the arrangements safely.

The exercises are invented. Their percentages are teaching calculations, not prescribed targets.

Sources: **S2**: section 2(a) | **S1**: indicator 127

Prepare a safety review for one hospital area

Use a non-confidential real case or the invented examples in this lecture.

Risk and responsibility

List significant hazards, current controls, responsible people and unresolved requirements.

Emergency readiness

Check the plan, safe routes, relevant safety equipment, all-shift roles and patient destinations.

Action and verification

Record immediate protection, actions, owners, deadlines and the evidence needed for closure.

Review the file with the clinical lead, nursing lead, technical team and responsible safety officer. Escalate decisions outside your authority.

Use non-confidential evidence and the current official sources. Do not present an educational checklist as a statutory certificate.

WORKING METHOD | Illustrative material is identified in the text.

Sources and continued use | 1

Select a source title or its official-source link to open the document.

S1

PHC hospital Minimum Service Delivery Standards

2024 hospital manual, CG-01MS-Ed2-01092023. Indicators 126-129 address emergency plans, fire equipment, safe exits, mock drills and staff training. Read the complete applicable indicators.

Punjab Healthcare Commission | **Official source**

S2

Punjab Community Safety Act 2021

Act XXXVIII of 2021. Sections 2-4 define the covered building, application and inspection process, certificate and qualified safety manager. The official Rescue website provides Gazette images.

Punjab Emergency Services Department | **Official source**

S3

Punjab Community Safety Buildings Regulations 2022

Official publication of the base regulations notified on 7 April 2022. Obtain applicable Gazette amendments before operational use; confirm the current inspection, drill and certificate requirements.

Punjab Emergency Services Department | **Official source** | **Official published regulations**

Educational material by Dr Qurban Hussain Khan. Source editions are stated; verify later amendments and applicable institutional orders before live use.

Sources and continued use | 2

Select a source title or its official-source link to open the document.

S4

Building Code of Pakistan: Fire Safety Provisions 2016

Official PEC publication. Fire prevention, means of escape, protection systems and authority having jurisdiction. Technical design and compliance assessment require competent professionals.

Pakistan Engineering Council | **Official source**

S5

Caring for those who care

WHO/ILO, 2022. A guide to occupational health and safety programmes for health workers. International guidance, not a Punjab statute or a substitute for applicable service and labour law.

World Health Organization / International Labour Organization | **Official source**

S6

Hierarchy of Controls

NIOSH, 2024. Elimination, substitution, engineering controls, administrative controls and personal protective equipment. Technical guidance; US legal provisions do not apply automatically in Punjab.

US Centers for Disease Control and Prevention / NIOSH | **Official source**

Educational material by Dr Qurban Hussain Khan. Source editions are stated; verify later amendments and applicable institutional orders before live use.

Sources and continued use | 3

Select a source title or its official-source link to open the document.

S7

Occupational hazards in the health sector

WHO practical hazard resource: infections, chemicals, patient handling, radiation, injuries and environmental hazards. Use local risk assessment and competent occupational-health advice.

World Health Organization | **Official source**

S8

Bloodborne Infectious Disease Risk Factors

NIOSH, 13 February 2025. Immediate first aid, prompt reporting and medical assessment after exposure. No drug regimen is taught in this lecture.

US Centers for Disease Control and Prevention / NIOSH | **Official source**

S9

Psycho-social risks and mental health; violence and harassment

WHO occupational-hazards resources. Work organisation, staff support and prevention of abuse and violence. International guidance; use the applicable Punjab complaints and service procedures.

World Health Organization | **Official source** | **Violence and harassment**

Educational material by Dr Qurban Hussain Khan. Source editions are stated; verify later amendments and applicable institutional orders before live use.

Sources and continued use | 4

Select a source title or its official-source link to open the document.

S10

Permit to Work Systems

HSE technical guidance on controlling hazardous maintenance work, identifying responsible people, precautions, handover and recordkeeping. Adapt the method; do not import UK legal duties into Punjab.

UK Health and Safety Executive | **Official source**

S11

Medical Oxygen Fire Risk: Mitigation Measures

WHO technical resource, 29 April 2021. Oxygen supports combustion. Apply product instructions, competent engineering advice and an approved clinical continuity plan.

World Health Organization | **Official source** | **Foundations of medical oxygen systems, 2023**

S12

Firecode: HTM 05-02, healthcare premises

Technical guidance on fire safety design and progressive horizontal evacuation. This is a UK technical reference, not Punjab law. The strategy depends on suitable building design and local approval.

UK Department of Health / NHS | **Official source** | **NHS evacuation and shelter guidance**

Educational material by Dr Qurban Hussain Khan. Source editions are stated; verify later amendments and applicable institutional orders before live use.

Sources and continued use | 5

Select a source title or its official-source link to open the document.

S13

Punjab occupational-safety law and the Labour Code 2026

The 2026 Labour Code is officially published. Section 1(3) requires a Gazette notification for commencement. Verify commencement, transitional provisions and coverage before applying particular duties.

Law and Parliamentary Affairs Department, Punjab | **Official source** | **Punjab Occupational Safety and Health Act 2019**

Educational material by Dr Qurban Hussain Khan. Source editions are stated; verify later amendments and applicable institutional orders before live use.