



Guideline on Vulnerability Assessment of Health Facilities

Emergency Medical Services Division
Department of Medical Services
Ministry of Health

MINISTRY OF HEALTH

Guideline on Vulnerability Assessment of Health Facilities

Emergency Medical Services Division

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Humanitarian Aid

Swiss Red Cross



This document will provide theoretical guidance to conduct vulnerability assessment of health facilities for earthquake hazard. The assessment guideline takes into account the structural, non-structural and functional aspects of the health facilities.

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1. Introduction

Health facilities play a critical role in times of emergencies and disasters. It is imperative that they remain structurally sound and fully operational at all times. To ensure that health facilities can withstand emergencies and disasters, an assessment of their vulnerabilities is essential. These vulnerabilities may be structural (load-bearing system), non-structural (architectural elements, equipment, chemicals, reagents, drugs) and functional (systems and operations). The cost of constructing safe health facilities is approximately around 4% higher than actual cost. Safe health facilities from disasters are more than just protecting physical structures. It is also about keeping health services accessible and functional at maximum capacity, even after a disaster or an emergency. With far-sighted leaderships, strong political commitment and knowledge, Bhutan can reduce risks and vulnerabilities to natural hazards. The cost difference in building safe and unsafe health facilities is negligible; however, this investment can make a huge difference between life and death.

2. Scope

This guideline on Vulnerability Assessment includes all the health facilities including hospitals, Basic Health Units, Sub-posts and Outreach Clinics (ORCs) in the country.

3. Objectives

- a. Assess and estimate existing health facilities in terms of structural, non-structural and functional vulnerabilities;
- b. Plan for renovation and retrofitting of health facilities to ensure their resilience, safety and continuous operations in times of emergency and disaster;
- c. Implement the 'safe health facility' concept, as per the vulnerability assessment; and
- d. Incorporate all necessary safety measures in the construction of new health facilities that could withstand any emergency or disaster.

4. Safe Health Facilities Concept

During emergencies or disasters, health facilities must remain safe, accessible and functioning at maximum capacity in order to help save lives. They must continue providing critical services such as medical and nursing care, laboratory and other health care services as well as respond to increased medical requirements related to the emergency. A safe health facility must remain organized with contingency plans in place and health personnel trained to keep the network operational.

Making all health facilities safe in the event of disasters is a major challenge. It is not only because of the high number of facilities and their high cost, but because there is limited information about current safety levels in health facilities. Health facilities accounts for more than 29 % of public spending on health in Bhutan. Most of this spending is for specialized health personnel and medical equipment.

The making of safe health facilities involve many factors that contribute to their vulnerability during an emergency or disaster such as location, design specifications and materials used. During emergency or disaster, damage to structural elements such as electric power, medical gas, water and sanitation and waste treatment and disposal can disrupt health care services.

Therefore, it is important to identify the safety level of health facilities before any disaster occurs. As part of risk reduction strategy, the Ministry of Health (MoH) aims to identify elements that need improvement and prioritize interventions in health facilities.

5. Indicators for Structural Safety

The health facility is a place where medical equipment, health workers and patients are housed and is essential in community service delivery before, during and after disaster. Therefore, following are the broad indicators for structural safety:

- Location, design and structures of the building, adherence to national building code, and other structural related codes;
- Quality of construction material used (cement, sand, wood, and roofing material);
- Regulation on building (approval and occupancy clearance) for new as well as old structure to ensure the safety of health facilities; and
- Architectural elements such as stairways, doors, windows, chimney, ceilings, wall cladding and false ceilings.

6. Indicators for Non-structural Safety

The non-structural safety elements are crucial for the daily operation of health facilities. If damaged, it would disrupt health care services and may even cause physical injury to patients and medical/health personnel. The following are the broad indicators of the non-structural safety:

- a. Location and anchorage of medical and laboratory equipment and other non-structural elements (furniture, appliances, electronics, coolers and air-conditioners, stored items, etc.);
- b. Basic services such as mechanical, electrical and plumbing installations, lighting fixtures, heating ducts and pipes, etc; and
- c. Location and storage of the hazardous materials

7. Indicators for Functional Safety

The functionality of health facilities is important during disaster and emergencies. There is need to provide continuous health care services when they are most needed. The broad functional indicators are:

- a. Trained health personnel to provide emergency services;
- b. Health Facility Contingency plans;

- c. Accessibility;
- d. Interoperability;
- e. Emergency standard operating procedures and guidelines;
- f. Logistics supply system and utilities;
- g. Security and alarm;
- h. Transportation and communication systems;
- i. Human resources;
- j. Monitoring and evaluation contingency planning; and
- k. Business continuity plan.

8. Vulnerability Assessment Team

The team should comprise of professionals who work in the areas of health facility construction, public health services, health and health facility administration, clinical incharges or hospital support activities (e.g., maintenance). If this vulnerability assessment team is not available or inadequate, Dzongkhag/Thromde/Gewog Disaster Team may be engaged. Since assessment involves multi-discipline area, team should consist of:

a. *At National Level*

- Engineers with training in health facility design;
- Architects with training in health facility design;
- Health Professional (ED doctor or Nurse);
- Biomedical engineer;
- Maintenance team (Engineer, electrician, plumber); and
- Representative from Emergency Medical Services Division.

b. *At District level*

- Engineers with training in health facility design;
- Architects with training in health facility design;
- Health professional (doctor or nurse);
- Biomedical engineer; and
- Maintenance team (engineer, electrician, plumber).

9. Non-structural Assessment

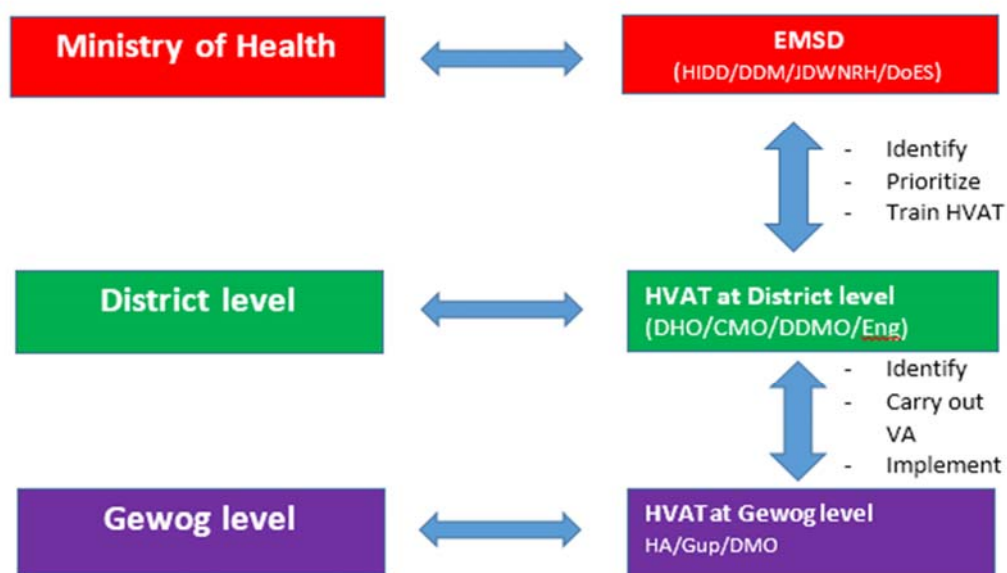
The assessment of non-structural vulnerability should be carried out after the assessment of structural vulnerability, since non-structural elements are crucial for keeping health service running. The failure of non-structural elements does not usually put the stability of a building at risk, but it can still injure and endanger people. The assessment team should verify the stability of non-structural elements (supports, anchors, and secure storage, etc.) and whether equipment can function during and after a disaster. This analysis includes the safety of critical networks such as water system, power, communications, medical diagnostic and treatment equipment.

10. Functional Assessment

The assessment team should assess implementation of plans and policies, level of training on emergency and disaster management, capacity and resources for disaster preparedness and response.

11. Coordination

Coordination Mechanism



Responsibilities:

EMSD

- Identify the team members of Health Facilities Vulnerability Assessment Team (HVAT) at the national level as per the guidelines;
- Prioritize the health facilities to be assessed in collaboration with local Health Facilities Vulnerability Assessment Team (HVAT);
- Facilitate the assessment of Structural, Non-structural and Functional elements of the vulnerability;
- Review the secondary information from media, local community and health facilities' administration;
- Familiarize the identified local HVAT members on the checklist;
- Train local HVAT members on the procedures of the assessment and data analysis;
- Initiate & notify the assessment team and health facilities' administration about the vulnerability assessment; and
- Monitor the implementation of vulnerability assessment recommendations.

Health Facilities Vulnerability Assessment Team (HVAT) at local level:

- Identify the team members of Health Facilities Vulnerability Assessment Team (HVAT) at the Dzongkhag level and Gewog level;
- Carry out the health facilities vulnerability assessment as per the Terms of Reference in collaboration with EMSD;
- Appoint a team leader to coordinate among the members and liaise with the administration of the respective health facilities' management; and
- Team leader to brief the team members on the ToR, define responsibilities of the members, plan of action, prepare report and present to the Ministry.

Notes-

- The frequency of the assessment will be decided based on the nature of the vulnerabilities. However, all the health facilities need to carry out vulnerability assessment once based on the findings of the self-assessment tool.
- The assessment team should take safety measures during the vulnerability assessment and wear personal protective gears as appropriate.

12. Level of Assessment

The level of vulnerability will be assessed using appropriate tools and methodologies as given in annexures.

13. Checklist and Validity

The checklist is used to assess the risk of the health facilities. The checklist is divided into 3 elements (structural, non-structural and functional risk) and each component is leveled as High, Average, Low and Unlikely. The instructions are clearly stated in the checklist. All the indicators must be rated unless it is not applicable for those particular level of health facilities. If the individual comes across any doubts about the rating, he/she should consult the team leader and other team members. However, it is preferable to give a higher rating of the risk than lower. The team should make note of the observation in the comment column and include in the report. The team should also provide feedback on the checklist to improve the checklist.

14. Field visit & data collection

The team shall have the following materials during the assessment:

- National Guideline on Vulnerability Assessment of Health Facilities
- Checklists of all three elements (structural, non-structural and functional)
- Contact numbers of the health facilities administrations and relevant officials
- Geographical location of the health facilities
- Plan & drawings of the health facilities(if any)

- Notebook and pen
- Camera (Photo & video)
- Torch
- Measuring tapes
- Scientific calculators
- Personal Protective Gears if deemed necessary

As soon as the team reaches the assessment area, the team should meet with the health facilities administration and seek support and cooperation while carrying out the assessment. The assessment team may be divided into subgroups, each having different elements to be assessed depending on the expertise. The information will be collected using the checklists and the team can also hold meeting with the health facilities administration. During the assessment, it is also important to observe the situation, for crosschecking the information. The people in the health facilities including the patients need to be interviewed if required. The team should take photographs and videos as evidences for documentation during the assessment.

15. Prioritization of Health Facilities to be assessed

The prioritization of the health facilities will be done based on the findings of the health sector vulnerability self-assessment tool.

16. Compilation of data

The team leader should coordinate and compile all the data within the stipulated timeframe using the identified format. The team should ensure that there is no data error. Once the assessment is completed, the assessment team will share, consolidate, and discuss their findings within a month with concerned authorities and stakeholders.

17. Data Analysis

Data analysis will be carried out by the EMSD in collaboration with HERS, PPD. The data tabulation and record will be done using a uniform template prepared by the apropos divisions.

18. Data storage

At the national level, the data of the assessment will be endorsed jointly by the EMSD and HMIS, and maintained by the HMIS. Duplicates of the data will also be stored with the respective health facilities and Dzongkhag health office.

19. Risk Rating

The risk has been categorized as 'High', 'Average', 'Low' and 'Unlikely' and all categories have been defined in the checklist corresponding to each component. Accordingly, the risk is

rated and assigned with the colors as elucidated below. The formula to calculate the risk may be determined by the assessment team depending on the format of report they choose. The team may request the expertise of MOH's Statistical Officer for data interpretation and risk calculation. The probability of the risk is also defined clearly in order to propose mitigation measures.

Risk	Rating	Colour	Risk calculation	Probability
High	4 (A)	Red	Risk may be calculated by the assessment team depending on the format adopted by the team (e.g. segregating the risk elements)	Nearly 100% probability in next year
Average	3 (B)	Yellow		Between 10 and 100% probability in next year, or at least one chance in 10 years
Low	2 (C)	Green		Between 1 and 10% probability in next year, or at least one chance in next 100 years
Unlikely	1 (D)	Blue		Less than 1% probability in next 100 years

20. Recommendations

The team should prepare the report and propose some mitigation measures to prevent or reduce the impact. The team will then present their findings to the Ministry of Health and the health facilities. The copies of the report will be shared with the health facilities and relevant officials. It is the primary responsibility of the EMSD and the administration of the concerned health facilities to follow up the recommendations.

21. Mitigation Measures for Structural Risk

If the assessment has identified structural risk, the appropriate measures must be identified to reduce or eliminate the risk. The risk mitigation option might be different for each individual component and should therefore be recommended one by one during the study. However, the following are some of the possible mitigation measures.

SI #	Structural	Mitigations
1	Location of the building	Away from flood, landslide – new hospital. Build flood and landslide protection wall for existing hospitals.
2	Design of the building	Include building codes-new hospital. Retrofit and repair building- existing hospitals.
3	Building Material	Use specified building materials (sand, cement, wood, steel etc.)
4	Architectural element	Fix proper stairways, doors, windows, chimney, ceilings, wall cladding, and false ceilings.
5	Regulation, Permit and clearance of new building	Enforce regulation and issue clearance after qualifying safety standard.

22. Mitigation Measures of Non-structural risk

If the assessment team has identified a non-structural element as a potential threat, the appropriate measures must be identified to reduce or eliminate the risk. The risk mitigation option might be different for each individual component and should therefore be recommended one by one during the study. However, the following are some of the possible mitigation measures.

SI #	Non-structural	Mitigation
1	Hazardous material and chemical substances	Removal and proper storage
2	Heavy object on a top shelf	Relocation and anchoring
3	gas cylinders and power generators	Restricting the mobility
4	Water heater	Anchorage
5	Between separate parts	Flexible couplings
6	Ceilings, lighting fixtures	Supports
7	Heavy tiles	Substitution
8	Rigid glass with adhesive plastic	Modification
9	Loose & fragile objects	Isolation
10	Chimney	Reinforcement

23. Mitigation Measures of functional risk

If the assessment has identified the functional risk, following are the measures to mitigate or minimize the risk.

SI #	Functional	Mitigations
1	Hospital staff	Training on emergency management
2	Contingency plan on hospital emergency management	Develop and implement the plan
3	Logistic supplies and utilities	Establish logistics management system
4	Accessibility of the hospital	Establish proper road network to the health facilities
5	Transport and communication	Identify the additional transport and equip EOC with communication equipment

24. Annexures

I. Elements evaluated

Elements evaluated		Problems	Actions	Priorities	Comments
Structural	Condition of Building				
Non-structural	Medical and laboratory equipment (oxygen cylinder, blood analyzer, x-ray machines etc.)				
	Furniture and fittings, office equipment and storage				
	Heating, ventilation, air conditioning, hot water				
Essential services	Electrical system				
	Telecommunication system				
	Water supply system				
	Fuel storage				
	Medical gases				
	Sewage system				
	Drainage system				
Functional	Power supply				
	Formation of emergency management committee				
	Contingency plan				
	Medications and supplies				

Priorities should be ranked between 1 (high priority) and 2 (low priority) depending on the need, importance of problem, and available resources.

Comments on Section. The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

II. Checklist for Vulnerability Assessment

Name of Facility:

Location of facility

Year of establishment:

Address:

Phone:

E-mail:

Total number of beds:

Bed occupancy rate in normal situations:

Description of the institution (general features, institution to which it belongs, type of facility, position in the network of health services, type of structure, population served, area of influence, service and administrative personnel, etc.)

Department or service	Number of beds	Additional capacity	Remarks
Emergency			
Pediatrics			
OB-Gyne wards			
Maternity ward			
Ortho ward			
Psychiatry ward			
Surgery ward			
OT			
ICU			
Others(Specify			

Comments on Section . The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

III. Structural Vulnerability Assessment Form for Hospital Building

a. Building Type: Load Bearing

Complete one form for each building site

<p>Basic Information Facility name: _____ Location of the facilities: _____ Address: _____ Type (tick one): <input type="checkbox"/>JDWNRH <input type="checkbox"/>Regional Hospital <input type="checkbox"/>District Hospital <input type="checkbox"/>Traditional Hospital <input type="checkbox"/> BHU No. Stories: _____ Year Build: _____ Use: _____ Open Ground Floor: Yes / No Construction Drawings Available: Yes / No Date: _____</p>	<p>Plan View Sketch <i>a plan of the building</i></p>			
	<p>PHOTOGRAPH (Attach)</p>			
<p>Prior events affecting safety of the health facility</p>	<p>Risk Level</p>			<p>Comments</p>
	<p>Low</p>	<p>Average</p>	<p>High</p>	
<p>1. Has there been prior structural damage to the facility? Determine whether structural reports indicate that the level of safety has been compromised and at what level. If there are no reports, determine whether there are cracks, evidence of settling, or structural changes as the result of a prior adverse event (see section 2.1.1 of Guide). If no damage has occurred, leave the boxes blank. High = Major damage; Average = Moderate damage; Low = Minor damage</p>				
<p>2. Was the facility built, remodeled, and/or repaired in a way that will affect the behavior of the structure? Determine what changes have been made that could affect structural integrity of the facility. Low = There is evidence of poorly executed modifications (for</p>				

<p>example, elimination of load-bearing wall, insertion of walls, construction that is too close to existing building, unreinforced window opening, etc.); Average = Evidence of moderate modifications (for example, small opening for windows or doors); High = Minor remodeling or modifications of good quality (for example, placement of columns and/or beams) or no adaptations have been necessary</p>				
<p>3. Safety of structural elements and construction materials used</p>				
<p><input type="checkbox"/> Dressed stone in cement mortar without RCC bands Built to HIDD standard plans post-2008: Low= Not confirmed/not present Average= Through stones and lapped corners present but not provided properly. High=Through stones and lapped corners confirmed</p>				
<p><input type="checkbox"/> Dressed stone in cement mortar w/RCC bands at roof line (older designs) Low= Not confirmed/not present Average= Through stones and lapped corners present but not provided properly. High= Through stones and lapped corners Confirmed</p>				
<p><input type="checkbox"/> Dressed stone in cement mortar w/RCC bands& vertical bars Low= Not confirmed/not present Average= Buildings with aspect ratio between cross walls (300mm or larger) is less than 20:1 and only minor, secondary interior partitions of single brick wall. Through stones confirmed High= Exterior wall with aspect ratio between cross walls 300mm or larger is 20:1 or more and with all interior partitions of single brick wall (As shown on HIDD drawings)</p>				
<p>4. What is the condition of the building? Inspect for cracks or evidence of settling, Low = Deterioration caused by weathering, cracks present in areas of special concern (depending on type of construction material), or evidence that settling has occurred; Average = Two of three conditions are present (deterioration and/or cracks</p>				

<p>and/or weathering and/or settling); High = Good; no evidence of deterioration, cracks, or settling.</p>				
<p>5. What is the condition of construction materials used for the building? Determine whether construction materials for elements that are in poor condition affect the structural integrity of the building. Low = large cracks, sections of construction material lost; large diagonal cracking in walls; visible deformation in wood; Average = Small cracks; beginning of diagonal cracks in wall; missing elements in wood structures; High = Fine or no cracks; minimal cracking in walls; no visible deformation in wood elements. (This section depends on the experienced judgment of a structural engineer.)</p>				
<p>6. Are buildings attached or very close to each other? Assess the distance between the main building of the facility and adjacent buildings. Low = There is almost no separation between buildings or separation is less than 0.5% of the height of the shorter of two adjacent buildings; Average = Separation is between 0.5% and 1.5% of the height of the shorter of two adjacent buildings; High = Separation is more than 1.5% of the height of the shorter of two adjacent buildings.</p>				
<p>7. What is the condition of the building's foundations? Evaluate the condition of the foundations. If building plans are available, confirm materials used and depth of foundation; inspect for evidence of sinking, cracks in the floors and possible settling. If plans are not available, assume a low safety level. Low = Information is lacking or foundation is of uncommented stones; Average = If foundation is of concrete, it is too shallow and there is evidence of damage; High = If foundation is of concrete, it is of adequate depth and there is no evidence of damage.</p>				
<p>8. Is the structure able to withstand the effects of a variety of natural</p>				

<p>hazards? Considering the issues addressed in the section on geographic location of the facility, and loss prevention or mitigation measures that have been carried out, rate the capacity of the facility as a whole to resist different hazards. Low= High vulnerability of structural components to hazards in area where facility is located; Average = Average vulnerability of structural components to hazards; High = Low vulnerability of structural components to hazards.</p>				
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Comments on Section: The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

b. Building Type: Load Bearing Structure-Rammed Earth (All Sides)

Complete one form for each building site

<p>Basic Information</p> <p>Facility name: _____</p> <p>Type (tick one): <input type="checkbox"/>JDWNRH <input type="checkbox"/>Regional Hospital <input type="checkbox"/>District Hospital <input type="checkbox"/>Traditional Hospital</p> <p>No. Stories: _____</p> <p>Year Build: _____</p> <p>Use: _____</p> <p>Open Ground Floor: Yes / No</p> <p>Construction Drawings Available: Yes / No</p> <p>Date: _____</p>	<p>Plan View: <i>Sketch a plan of the building</i></p>													
<p>Prior events affecting safety of the health facility</p>	<p>PHOTOGRAPH (Attach)</p>													
<p>1. Has there been prior structural damage to the facility? Determine whether structural reports indicate that the level of safety has been compromised and at what level. If there are no reports, determine whether there are cracks, evidence of settling, or structural changes as the result of a prior adverse event (see section 2.1.1 of Guide). If no damage has occurred, leave the boxes blank. Low = Major damage; Average = Moderate damage; High =Minor damage</p>	<table border="1"> <thead> <tr> <th colspan="3">Safety Level</th> <th rowspan="2">Comments</th> </tr> <tr> <th>Low</th> <th>Average</th> <th>High</th> </tr> </thead> <tbody> <tr> <td data-bbox="1182 987 1329 1300"></td> <td data-bbox="1339 987 1486 1300"></td> <td data-bbox="1497 987 1644 1300"></td> <td data-bbox="1654 987 1919 1300"></td> </tr> </tbody> </table>			Safety Level			Comments	Low	Average	High				
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Low	Average	High												
<p>2. Was the facility built, remodeled, and/or repaired in a way that will affect the behavior of the structure?</p>														

<p>Determine what changes have been made that could affect structural integrity of the facility.</p> <p>Low = There is evidence of poorly executed modifications (for example, elimination of load-bearing wall, insertion of walls, construction that is too close to existing building, unreinforced window opening, etc.);</p> <p>Average = Evidence of moderate modifications (for example, small opening for windows or doors);</p> <p>High = Minor remodeling or modifications of good quality (for example, placement of columns and/or beams) or no adaptations have been necessary</p>				
<p>3. Safety of structural elements and construction materials used</p>				
<p>4. What is the aspect ratio between cross wall?</p> <p>Asses the aspect ratios of walls.</p> <p>Low= Aspect ratio between cross walls greater than 9:1</p> <p>Average= W/o above features; aspect ratio between cross walls 9:1 or less</p> <p>High=Lapped exterior corners and horizontal timbers in wall at corners, aspect ratio between cross walls 7:1 or less, battered walls and additions stitched at joint</p>				
<p>5. What is the condition of the building?</p> <p>Inspect for cracks, or evidence of settling.</p> <p>Low = Deterioration caused by weathering, cracks present in areas of special concern (depending on type of construction material), or evidence that settling has occurred;</p> <p>Average = Two of three conditions are present (deterioration and/or cracks and/or weathering and/or settling);</p> <p>High = Good; no evidence of deterioration, cracks, or settling.</p>				
<p>6. What is the condition of construction materials used for the building?</p> <p>Determine whether construction materials for elements that are in poor condition affect the structural integrity of the building.</p> <p>Low = Wall with large cracks; sections of construction material lost; diagonal cracking in walls; visible deformation in wall, wood, or Rammed elements; missing elements at connections;</p>				

<p>Average = Small cracks or evidence of cracks at joint; beginning of diagonal cracks in wall; missing elements in connections of wood structures; High = Fine or no cracks; minimal cracking in walls; no visible deformation in wood elements. (This section depends on the experienced judgment of a structural engineer.)</p>				
<p>7. Are buildings attached or very close to each other? Assess the distance between the main building of the facility and adjacent buildings. Low = There is almost no separation between building or separation is less than 0.5% of the height of the shorter of two adjacent buildings; Average = Separation is between 0.5% and 1.5% of the height of the shorter of two adjacent buildings; High = Separation is more than 1.5% of the height of the shorter of two adjacent buildings.</p>				
<p>8. What is the condition of connections between structural elements? Inspect the condition of connections between main wall & internal wall, checking for cracks in outer main wall and partition connections, as well as broken or missing lapping in these areas. Low = Connections are in poor condition; Average = Connections are in average condition; High = Connections are in good condition.</p>				
<p>9. What is the condition of the building's foundations? Evaluate the condition of the foundations. If building plans are available, confirm materials used and depth of foundation; inspect for evidence of sinking, cracks in the floors and possible settling. If plans are not available, assume a low safety level. Low = Information is lacking or foundation is of uncommented stones; Average = If foundation is of stones, it is too shallow and there is evidence of damage; High = If foundation is of stone, it is of adequate depth and there is no evidence of damage.</p>				
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Comments on Section: The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

c. Building Type: Frame Structure

Complete one form for each building site

<p>Basic Information</p> <p>Facility name: _____</p> <p>Type (tick one): <input type="checkbox"/>JDWNRH <input type="checkbox"/>Regional Hospital <input type="checkbox"/>District Hospital <input type="checkbox"/>Traditional Hospital</p> <p>No. Stories: _____</p> <p>Year Build: _____</p> <p>Use: _____</p> <p>Open Ground Floor: Yes / No</p> <p>Construction Drawings Available: Yes / No</p> <p>Date: _____</p>	<p>Plan View :Sketch a plan of the building</p>														
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Safety Level			Comments												
Low	Average	High													

<p>Low = There is evidence of poorly executed modifications (for example, elimination of load-bearing wall, insertion of walls, construction that is too close to existing building, unreinforced window opening, etc.); Average = Evidence of moderate modifications (for example, small opening for windows or doors); High = Minor remodeling or modifications of good quality (for example, placement of columns and/or beams) or no adaptations have been necessary</p>				
Safety of structural elements and construction materials used				
<p>What is the condition of the building? Inspect for missing concrete cover, cracks, or evidence of settling, Low = Deterioration caused by weathering, cracks present in areas of special concern (depending on type of construction material), or evidence that settling has occurred; Average = Two of three conditions are present (deterioration and/or cracks and/or weathering and/or settling); High = Good; no evidence of deterioration, cracks, or settling.</p>				
<p>What is the condition of structural components of the building? Inspect for cracks in the column & beams, missing of concrete covers, buckling of reinforced rods, large cracks in infill walls etc. Low= crack in column & beams column joints of frames at the base & at joint of couplet walls. Spilling of concrete covers, buckling of reinforced rods, large cracks in infill walls, failure of individual infill panels; Average= cracks in column, beams, structural walls, partition and infill walls High= fine cracks in plaster over frame members, partition and infill walls</p>				
<p>Is there a soft story provided? Inspect for soft/weak story at the base Low= Full soft story provided at ground floor; Average = Half soft story provided at ground floor; High= soft story not provided.</p>				
<p>Is there a short column? Inspect for short column effect Low= short column provided more than 40%;</p>				

<p>Average= short column provided in between 10 to 40%; High= No short column provided.</p>				
<p>Is there plan irregularity? Check the plan irregularity. Low=T-shaped, H-shaped & U-shaped, Average= L-shaped & large opening, High = Regular shaped</p>				
<p>Vertical irregularity? Check for vertical irregularity. Low= Heavy overhangs & Narrow tall (Height of the building should be less than three times base), Average= building provided with setbacks and building on hill sides, High= No vertical irregularity provided.</p>				
<p>What is the condition of construction materials used for the building? Determine whether construction materials for elements that are in poor condition affect the structural integrity of the building. Low = Rusting reinforcement in concrete with large cracks; sections of construction material lost; diagonal cracking in walls; visible deformation in steel, wood, or concrete elements; missing elements at connections; Average = Small cracks or evidence of rusting reinforcement; beginning of diagonal cracks in wall; missing elements in connections of steel and wood structures; High = Fine or no cracks; no rust apparent in concrete; minimal Cracking in walls; no visible deformation in steel and wood elements. (This section depends on the experienced judgment of a structural engineer.)</p>				
<p>How do nonstructural elements interact with the structure? Determine whether there are unsafe interactions, such as: window placement that produces short columns; rigid piping that crosses expansion joints; weight affecting a structural element of the building (for example, a water tank on the roof), etc. Low = Two or more instances of the examples mentioned above (or others) have been identified; Average = Only one instance of the examples mentioned above (or others) have been identified; High = There are no instances of the examples mentioned above (or others)</p>				

<p>Are buildings attached or very close to each other? Assess the distance between the main building of the facility and adjacent buildings. Low = There is almost no separation between buildings or separation is less than 0.5% of the height of the shorter of two adjacent buildings; Average = Separation is between 0.5% and 1.5% of the height of the shorter of two adjacent buildings; High = Separation is more than 1.5% of the height of the shorter of two adjacent buildings.</p>				
<p>Is there structural redundancy in the facility? Take into account portal frames, load-bearing walls, and column-beam connections, among other elements, when determining the lines of resistance to lateral forces in the structure. Low = Fewer than three lines of resistance in each direction; Average = Three lines of resistance in each direction or lines without orthogonal orientation; High = More than three lines of resistance in each orthogonal direction of the building.</p>				
<p>What is the condition of connections between structural elements? Inspect the condition of connections between structural elements, checking for cracks in beam-column connections, as well as broken or missing concrete cover in these areas. Low = Connections are in poor condition; Average = Connections are in average condition; High = Connections are in good condition.</p>				
<p>What is the condition of the building's foundations? Evaluate the condition of the foundations. If building plans are available, confirm materials used and depth of foundation; inspect for evidence of sinking, cracks in the floors and possible settling. If plans are not available, assume a low safety level. Low = Information is lacking or foundation is of uncommented stones; Average = If foundation is of concrete, it is too shallow and there is evidence of damage; High = If foundation is of concrete, it is of adequate depth and there is no evidence</p>				

of damage.				
<p>Is the structure able to withstand the effects of a variety of natural hazards?</p> <p>Considering the issues addressed in the section on geographic location of the facility, and loss prevention or mitigation measures that have been carried out, rate the capacity of the facility as a whole to resist different hazards.</p> <p>Low= High vulnerability of structural components to hazards in area where facility is located;</p> <p>Average = Average vulnerability of structural components to hazards;</p> <p>High = Low vulnerability of structural components to hazards.</p>				

Comments on Section: The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

IV. Safety level as determined by non-structural elements of the health facilities (mark the corresponding safety level with “X”)

Critical Systems	Safety level			Comments/
	Low	Average	High	
A. Electrical Systems				
<p>1. Is there an alternative source that can provide an uninterrupted supply of electricity for 72 hours in critical areas of the facility?</p> <p>Depending on the facility’s role in the health services network, determine whether there is an alternative source of energy that allows for uninterrupted power in case of an emergency. Where a back-up generator is available, check its condition and fuel reserves. If a back-up generator is not present, the evaluator should verify that there are emergency lights with charged batteries.</p> <p><i>Low = There is no alternative power source that can meet the needs of the facility;</i> <i>Average = There is an alternative power source that meets the needs of the facility but it is in poor condition and/or fuel reserve or batteries are lacking);</i> <i>High = There is an alternative power source that meets the needs of the facility, it is operational and is regularly maintained.</i></p>				
<p>2. Is the alternative power source adequately protected from natural hazards?</p> <p>Depending on the facility’s role in the health services network, verify the kind of alternative source of power (electrical generator, UPSS, or other), if it is located in a secure and accessible place, and if it has the necessary bracing and/or anchoring elements.</p> <p><i>Low = There is no alternative power source;</i> <i>Average= There is an alternative power source but it is not adequately protected from known hazards;</i> <i>High = There is an alternative power source and it is protected from known hazards.</i></p>				
<p>3. Is the facility’s electrical system protected from hazards?</p> <p>Verify the operation, labeling, means of anchoring, and protection of different components of the electrical system, among them, general circuits and networks, panels and their connections, ducts and electrical cables. Take into account the</p>				

<p>presence of trees and poles that can jeopardize cables and ducts. <i>Low = Electrical components are not protected;</i> <i>Average = Electrical components are partially protected;</i> <i>High = Electrical components are protected.</i></p>				
<p>4. Is the electrical system protected against electrical discharges? Check that grounding apparatus are functional and properly installed, and ensure that lightning conductors are in place where needed are in good condition and well anchored. <i>Low = The facility's electrical system is not grounded and/or lightning rods are necessary but have not been installed;</i> <i>Average = The electrical network is grounded but grounding is not maintained, and/or lightning protection are not properly anchored;</i> <i>High = Devices to prevent electrical discharges are installed and they are regularly maintained.</i></p>				
<p>5. Is the lighting system secure in critical areas of the facility? Ensure that lighting fixtures (eg., fan, AC, tube light sets and etc.) are properly fastened. <i>Low = Lighting fixtures are not adequately secured;</i> <i>Average = Lighting fixtures are only partially secured and pose a risk for people;</i> <i>High = Lighting fixtures are properly secured.</i></p>				
<p>B. Telecommunication System</p>				
<p>1. Are communications systems in the facility functional? Verify that a basic communications system is installed and is in good working order. <i>Low = The communication system is in poor condition or there is no communications system;</i> <i>Average = A basic communications system is in place and it is in fair condition;</i> <i>High = A basic communications system is in place and it is in good condition.</i></p>				
<p>2. Is there a backup communication system? Check the existence of a backup communications system (eg., spare batteries, solar panel, satellite phones and etc), whether it is operational, and steps taken to protect it; including the condition of antennas and the devices used to anchor them. <i>Low = There is no backup communications system; Average = A backup communications system is in place but it does not function correctly;</i></p>				

<p><i>High = A backup communications system is in place, it is in good condition, and operates independently of the basic installed communications system.</i></p>				
<p>3. Are communication equipment and cables protected? Assess the safety of the areas where communications systems are located as well as the condition of fasteners and bracing. <i>Low = Communications equipment is not protected;</i> <i>Average = Communications system has some protective measures in place;</i> <i>High = Communications equipment is protected.</i></p>				
<p>C. Water Supply System</p>				
<p>1. Is there a permanent water reserve that can provide at least supply of approximately 20 liters per day per patient for a three-day period (WHO) Check that there are water reserves, and determine the demand they will satisfy. <i>Low = There are no water reserves;</i> <i>Average = There are sufficient reserves for less than three days;</i> <i>High = There are sufficient reserves for at least three days.</i></p>				
<p>2. Are water storage locations protected and tanks in good condition? Inspect that the water tanks are covered, overhead tanks have necessary supports and anchoring, are protected from potential contamination, and that there is no evidence of cracks or leaks in the tank. <i>Low = Location, fastenings, and condition of tanks are inadequate;</i> <i>Average = Location, fastenings, and condition of tanks are adequate;</i> <i>High = Location, fastenings, and condition of tanks are good.</i></p>				
<p>3. Is there an alternative water supply system that can supplement the main local distribution system? Verify that there are water sources capable of supplementing the main local distribution network, and determine how much they can provide if needed. <i>Low = There is no alternative source or it can provide less than 30% of demand;</i> <i>Average = Alternative system can provide 30% to 80% of demand;</i> <i>High = Alternative System can provide more than 80% of daily demand.</i></p>				

<p>3. What is the condition of internal water distribution system? Review the condition of the water distribution networks to ensure that water reaches necessary service points and there are no leaks. <i>Low = Less than 60% of components are in operational condition;</i> <i>Average = Between 60% and 80% of components are in good condition;</i> <i>High = Over 80% of components are in good condition.</i></p>				
<p>4. What programs are in place to maintain water quality in the facility? Ensure that the facility has a water quality control program in place that includes necessary corrective measures. <i>Low = Water quality control program does not exist; Average = Water samples are taken sporadically but follow-up with corrective measures is lacking;</i> <i>High = Water samples are taken regularly and corrective measures are applied.</i></p>				
D. Fuel Storage (Gasoline, diesel)				
<p>Is fuel stored in safe conditions and is there a five-day fuel reserve? Verify that the facility has a five-day fuel reserve. The fuel must be located in a safe, labeled, and fenced area, and containers must be anchored to avoid spills. <i>Low = Fuel reserves are not adequate and storage area is not secured;</i> <i>Average=Fuel storage area has some security and there are at least three days of reserves;</i> <i>High = Fuel storage is in a secure area and there is a five-day reserve.</i></p>				
E. Medical gases (oxygen)				
<p>1. Are there enough medical gases to last for at least three days? Verify the medical gas reserve capacity, taking into account the facility’s routine use of gases and the potential number of victims that would use the facility in the event of a disaster. <i>Low = There is less than one day of reserves;</i> <i>Average= There are one to three days of reserves;</i> <i>High = There are at least three days of reserves.</i></p>				
<p>2. Are medical gas tanks properly anchored? Assess whether medical gas tanks, pumps and cylinders have adequate anchors or fasteners. <i>Low= Anchors and/or fasteners are lacking;</i> <i>Average = Quality of anchors and/or fasteners is inadequate;</i></p>				

<p><i>High = Anchors and/or fasteners are of good quality.</i></p>				
<p>3. Are medical gas tanks stored in safe areas? Inspect the area set aside for storage of medical gases and ensure that is accessible, is at safe distance from heat sources, has signs posted, and that firefighting equipment is available. <i>Low = No area has been set aside to store medical gases or the enclosure is not accessible;</i> <i>Average = Areas have been set aside for storage of medical gases, but safety measures are inadequate or access to the enclosures poses a risk;</i> <i>High = Appropriate storage areas are in place, enclosures are accessible, and they do not pose a risk.</i></p>				
<p>F. Sanitation System</p>				
<p>1. Has the health facility been flooded because of poor wastewater drainage? Where there have been previous sewage flood events? Determine what measures have been used to solve the issue. <i>Low = History of sewage flooding in the facility;</i> <i>Average = Corrective measures have been taken (allow the drainage of wastewater);</i> <i>High = The facility has no history of sewage flooding and/or corrective measures have been taken to solve the problem.</i></p>				
<p>2. Are waste collection sites (regular and medical waste) protected? Assessment team should inspect the safety of the waste collection site/storage. <i>Low = Waste sites are not protected;</i> <i>Average = There is a certain level of protection for waste sites;</i> <i>High = Waste sites are well protected.</i></p>				
<p>G. Storm drainage system</p>				
<p>1. Is the storm drainage system in good condition? Assess the efficiency of the storm drainage system, including roofing, gutters, and drains. <i>Low = Storm drainage does not exist, or it is in poor condition;</i> <i>Average = The storm drainage system is in average condition;</i> <i>High = Storm drainage system is in good condition and it receives regular maintenance.</i></p>				

H. Heating, ventilation, air conditioning, and/or hot water systems				
<p>1. Are components for heating, ventilation, air conditioning, and/or hot water systems protected?</p> <p>Ensure that ducts and pipes are properly fastened and anchored, that connections to equipment are flexible, and that components of the systems are not subject to flooding, strong winds or earthquakes.</p> <p><i>Low = Equipment is not protected from potential hazards;</i> <i>Average = Equipment is partially protected from potential hazards;</i> <i>High = Equipment is adequately protected from potential hazards.</i></p>				
<p>2. Are components for heating, ventilation, air conditioning, and/or hot water systems in good condition?</p> <p>Check the condition of all components of the system and review the maintenance that is being carried out.</p> <p><i>Low = Equipment is in poor condition;</i> <i>Average = Equipment is in average condition;</i> <i>High = Equipment is in good condition</i></p>				
I. Furniture and fittings, office and storeroom equipment				
<p>1. Is shelving anchored and are contents protected?</p> <p>Inspect shelves for anchors and fastenings and measures used to protect shelf contents (lip, railings, elastic bands, etc.).</p> <p><i>Low = Shelving is not anchored to walls and the contents are not secured; Average = Shelving is anchored but contents are not secured;</i> <i>High = Shelving is anchored and contents are secured.</i></p>				
<p>2. Is office equipment secured?</p> <p>Inspect office equipment (computers, printers, photocopy machines, photo frames, etc.) to ensure that there are fasteners or straps to keep them from falling.</p> <p><i>Low = Less than 20% of equipment is anchored; Average = Between 20% and 80% of equipment is anchored;</i> <i>High = More than 80% of equipment is anchored.</i></p>				
<p>3. Are furniture and fittings secured and placed appropriately?</p> <p>Measures must be in place to keep furniture from moving (for example, brakes are engaged; cables, straps, or other anchoring devices are in place).</p>				

<p><i>Low = Furniture and fittings are not anchored and wheels on furniture are not locked;</i> <i>Average = Some furniture and fittings are anchored and wheels on furniture are locked in some cases;</i> <i>Good = Furniture and fittings are anchored and wheels on furniture are locked.</i></p>				
<p>J. Medical and laboratory equipment and supplies used for diagnosis and treatment</p>				
<p>1. Is medical and laboratory equipment protected from the impact of adverse events? Assessment team must ensure that equipment is protected from adverse events. Fasteners and anchoring devices should be used for stationary equipment, equipment stored on shelves should be contained to prevent it from falling, and portable equipment must have brakes on wheels. Confirm that equipment is located above floor level and would not be exposed to strong winds. <i>Low = 20% or less of equipment is protected; Average = Between 20% and 80% of equipment is protected;</i> <i>High = More than 80% of equipment is protected.</i></p>				
<p>2. Is medical and laboratory equipment in good condition? Assess the condition of the medical and laboratory equipment and review-scheduled maintenance. <i>Low = 20% or less of equipment is in good condition;</i> <i>Average = Between 20% and 80% of equipment is in good condition;</i> <i>High = More than 80% of equipment is in good condition.</i></p>				
<p>K. Architectural components</p>				
<p>1. Are doors or entrances to the facility secure and functional? Inspect the condition of the doors, make sure they are free of obstacles, and that they cannot negatively affect safety of the facility. <i>Low = Doors and entrances are not secure and they impede safe movement in the facility;</i> <i>Average = Doors and entrances are not secure or they impede safe movement in the facility;</i> <i>High = Doors and entrances are secure and they do not impede safe movement in the facility.</i></p>				
<p>2. Are windows of the facility secure and in good condition? Inspect the condition of windows and ensure that they will not have a negative effect on the facility.</p>				

<p><i>Low = Windows are subject to damage and damage would compromise the ability of the facility to function;</i> <i>Average = Windows are subject to damage but damage would not compromise the ability of the facility to function;</i> <i>High = Windows are subject to no or minor damage that would compromise the ability of the facility to function.</i></p>				
<p>3. Are the elements of the building envelope (outside walls, facings, etc.) in good condition? Assess whether outside walls, bars, facades, and fencing around the facility are properly anchored to the structure, are in good condition, and will not have a negative impact on the facility. <i>Low = Elements are subject to damage and damage would impede the performance of the health facility;</i> <i>Average = Elements are subject to damage but damage would not impede performance of the health facility;</i> <i>High = No or minor potential for damage that would impede the performance of the health facility.</i></p>				
<p>4. Are roofs and roofing safe and in good condition? Assessment team should check the condition of roofs and roofing (including bracing, drainage) and its vulnerability to strong winds, earthquakes, ash fall, or intense rains. <i>Low = Roofs and roofing are in poor condition and/or damage would affect the performance of the facility; Average = Roofs and roofing are in average condition and/or damage would not affect the performance of the facility;</i> <i>High = Roofs and roofing are in good condition and/or there is no or minor potential for damage that would affect performance of the facility.</i></p>				
<p>5. What is the condition and safety of parapets and other outside elements? Inspect the condition of exterior elements of the building, and determine whether parapets, railings, cornices, ornaments, etc., are properly anchored and whether they pose a hazard to the facility. <i>Low = Subject to damage and damage to element(s) would impede the performance of the health facility;</i></p>				

<p><i>Average= Subject to damage but damage to element(s) would not impede performance of the health facility;</i> <i>High = There is no or minor potential for damage to element(s) which could impede the performance of the health facility.</i></p>				
<p>6. Are areas for traffic outside of the facility safe and in good condition? Verify that there are no trees, utility poles, signs, vehicles, walls, etc., that could obstruct vehicle and pedestrian traffic outside of the facility. <i>Low = Damage to the road and walkways will impede access to buildings or endanger pedestrians;</i> <i>Average = Damage to road and walkways will not impede pedestrian access, but will impede vehicle access;</i> <i>High = There is no or minor potential for damage which could impede pedestrian or vehicle access.</i></p>				
<p>7. Are conditions safe for movement inside the building? Inspect corridors, stairways, exit doors, etc., to make sure they are clear of any obstacles. <i>Low = Damage to interior passageways will impede movement inside building and endanger occupants;</i> <i>Average = Damage to interior passageways will not impede movement of people but will impede movement of gurneys and other wheeled equipment;</i> <i>High = There is no or minor potential for slight damage which would not impede movement of people or wheeled equipment.</i></p>				
<p>8. Are internal walls or partitions safe and in good condition? Examine the condition of internal partitions and ensure that they are anchored to the structure and that they will not affect the behavior of the building. <i>Low = Damage to these elements would affect the facility’s functional capacity;</i> <i>Average = Damage to these elements would not affect the facility’s functional capacity;</i> <i>High = There is no or minor potential for damage that would affect the facility’s functional capacity.</i></p>				
<p>9. Are the facility’s suspended ceilings safe and in good condition? Ensure that there are no breaks or signs of moisture, damage and that suspended</p>				

<p>ceilings are well anchored so that will not affect the facility’s functional capacity. [NOTE: If these elements are not present in the facility, leave boxes blank.] Low = Damage to these elements would affect the facility’s functional capacity; Average = Damage to these elements would not affect the facility’s functional capacity; High = There is no or minor potential for damage to these elements that would affect the facility’s functional capacity.</p>				
<p>10. Is the lighting system (interior and exterior lighting) for the facility safe and in good condition? Assess the condition and performance of the lighting system, including the emergency lighting system, and ensure that elements will not affect safety in the facility. Low = Damage to these elements would affect the facility’s functional capacity; Average = Damage to these elements would not affect the facility’s functional capacity; High = There is no or minor potential for damage to these elements that would affect the facility’s functional capacity.</p>				
<p>11. Is there a fire protection system and is it in good condition? Confirm that fire extinguishers/firefighting equipment are located in high-risk areas, that they are functional, easy to access, are well anchored, and are properly labeled. Check expiration dates on extinguishers. Low = There is no fire protection equipment, and/or it is out of date, and/or it is not accessible; Medium = There is insufficient equipment and/or it is not anchored, and/or it is not labeled; High = There is enough fire protection equipment and it is operational, accessible, properly anchored, and properly labeled.</p>				
<p>12. Are staircases and/or ramps safe and in good condition? Ensure that these areas are in good condition, clear of objects, and have railings or other measures that would make them safe to use in disaster situations. [NOTE: If staircases or ramps are not present in the facility, leave boxes blank.] Low = They are in poor condition, and would affect the facility’s functional capacity; Average = They are in average or poor condition, but their condition would not affect the facility’s functional capacity; Good = They are in good High- in good condition and would not affect the facility’s functional capacity.</p>				

<p>13. Is flooring safe and in good condition? Assess the condition of flooring to ensure that it would not make the facility more vulnerable in a disaster (no cracks, uneven or slippery areas, etc.). <i>Low= Flooring is in poor condition which could affect the facility's functional capacity;</i> <i>Average = Flooring is in poor to average condition but it will not affect the facility's functional capacity;</i> <i>Good = Flooring is in good condition and it will not affect the facility's functional capacity.</i></p>				
<p>14. Are access routes to the facility in good condition? Ensure that access routes are free of obstacles (e.g. Stalls, street vendors, and barriers), that there are no elements that could obstruct the routes (trees, utility poles, possible flooding, etc.); and that authorized traffic personnel are present to control traffic. Determine availability of alternative access routes to the facility. <i>Low =There is potential for damage that would block routes and impede access to the facility; Average = Damage would not impede access by pedestrians, but would prevent vehicle access; High = There is slight or no potential for damage which would affect access by pedestrians or vehicles.</i></p>				
<p>15. Does the facility have signs showing evacuation routes and does staff understand them? Verify that the evacuation routes are marked by signs, and that staffs understand these signs. Low = There are no signs for evacuation; Average = Signs exist but they are not understood by personnel; High = Signs are in place and personnel understand them.</p>				
<p>16. Are other architectural elements of the facility safe and in good condition? Identify other architectural elements whose condition or vulnerability might compromise the safety of the facility. [NOTE: If other architectural elements are not identified, leave boxes blank.] Low = Damage to element(s) would affect the facility's capacity to function; Average = Damage to element(s) would not affect the facility's capacity to function; Good = There is no or minor potential for damage which would affect the facility's capacity to function.</p>				

Comments on Section. The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....

Name of Evaluator(s).....

Signature of Evaluator

V. Safety level as determined by functional aspects of the health facility (mark the corresponding safety level with “X”)

Organization of the health facility’s disaster committee	Safety level			Comments
	Low	Average	High	
<p>1. Does the facility have a disaster committee? Obtain a copy of the committee’s terms of reference and verify that the committee is multidisciplinary. Low = Committee does not exist or there is no documentation about the committee; Average = Committee exists with three or less disciplines represented, but it is not functioning; High = Committee exists with four or more disciplines represented, and it is functioning.</p>				
<p>2. Is each member of the disaster committee aware of his/her specific responsibilities? Verify that members’ assigned responsibilities are in writing, describing their</p>				

<p>specific roles. <i>Low = Responsibilities have not been assigned or these responsibilities are not documented;</i> <i>Average = Responsibilities have been officially assigned but members are not familiar with them and/or they have not been implemented; High = All members know and meet the terms of their assigned responsibilities.</i></p>				
<p>3. Has a space been designated and equipped for the facility’s Emergency Operations Center (EOC)? Confirm that there is a designated room to be used for emergency management, that it is located in a safe area of the facility, and that all necessary documentations are available. <i>Low = A space has not been designated for the Emergency Operations Center or it cannot be verified;</i> <i>Average = A space has been designated but it is not in a secure area, or it is not properly equipped, or important documentation is not available;</i> <i>High = A space has been designated in a secure area, it is properly equipped, and important documentation is readily available.</i></p>				
<p>4. Is an updated telephone directory of authorities (internal and external) and other contacts available? Ensure that a directory exists with contact information for support services needed in an emergency. <i>Low =Directory does not exist or is not available for inspection;</i> <i>Average = Directory exists but it is not updated, committee members are not aware of it, or it only contains contact information for facility staff;</i> <i>High =Directory of internal and external authorities exists, it is updated, and committee members are familiar with it.</i></p>				
<p>Operational plan for internal or external disasters</p>				
<p>Does the facility have an emergency contingency plan? Ascertain that a plan exists, that it has been updated, is operational, and that health facility personnel are familiar with it. <i>Low = The plan does not exist or a document is not available;</i></p>				

<p><i>Average = The plan exists but it is not operational, and/ or it is not updated, and/or it has not been distributed, and/or it has not been used in simulation exercises.</i> <i>High = The plan exists, it is operational, it is updated, it has been distributed, and it has been used in simulation exercises.</i></p>				
<p>Does the emergency contingency plan address both internal and external emergencies? Ensure that the disaster plan addresses the possibility of both internal and external events. <i>Low = The plan does not address either or there is no supporting documentation;</i> <i>Average = The plan addresses only internal emergencies or only external emergencies;</i> <i>High = The plan addresses both internal and external emergencies.</i></p>				
<p>Does the plan identify specific actions that will strengthen critical care services in the facility? Verify that the plan specifies actions that will be taken. <i>Low = Actions are not included or are addressed only in document;</i> <i>Average = Actions are included but are only partially implemented;</i> <i>High = Actions are included and have been completely implemented.</i></p>				
<p>Are there procedures for activating and deactivating the plan and are personnel familiar with procedures? Verify that the plan indicates the type of signal as well as how, when, and who is responsible for activating and deactivating the plan. <i>Low = Procedures are not addressed or are addressed only in the document;</i> <i>Average = Procedures are included in the plan, but personnel have not been trained;</i> <i>High = Procedures are included and personnel are familiar with them.</i></p>				
<p>Does the plan address special administrative procedures for disasters? Ascertain that the plan includes specific procedures for attaining logistics support needed to respond to an emergency, and confirm the process with relevant personnel. <i>Low = Procedures are not addressed or are addressed only in the document;</i> <i>Average = Procedures are included in the plan, but administrative process is slow;</i> <i>High = Procedures are included and personnel are familiar with how to implement them.</i></p>				

<p>Have funds been specifically allocated to carry out the disaster plan? Verify that the facility has funds budgeted specifically for use in the case of disasters and that the budget includes disaster and emergency preparedness activities as well as response. <i>Low = Funds have not been allocated or there is no documentation showing budget;</i> <i>Average = Budget exists but it guarantees funds only for disaster and emergency preparedness activities, or only for disaster and emergency response activities;</i> <i>High = Funds are allocated for both disaster and emergency preparedness and for disaster and emergency response.</i></p>				
<p>Are procedures in place for expanding space when needed for emergency response and/or expanding space for critical care services? Confirm that the plan identifies spaces that can be equipped and expanded to respond to an emergency. <i>Low = Space for expansion has not been identified or there is no documentation regarding expansion;</i> <i>Average = Space has been identified and personnel have been trained to carry out the expansion, but there are no resources for expansion;</i> <i>High = Procedures exist, personnel have been trained, and resources are in place to carry out expansion of space.</i></p>				
<p>Does the plan include procedures for admitting patients in the event of emergencies, including forms and protocols for treating mass casualties? Procedures should specify the places and persons responsible for processing admissions as well as the forms and protocols available. <i>Low = Procedures are not in place or there is no relevant documentation;</i> <i>Average = Procedures are in place but only forms are available or only protocols available;</i> <i>High = Procedures are in place and both forms and protocols are available.</i></p>				
<p>Are procedures in place for triage, resuscitation, stabilization, and treatment? According to the type of facility, confirm that procedures have been defined, that staff has been trained, and that equipment and triage cards are available. <i>Low = Procedures have not been defined or there is no documentation on procedures;</i> <i>Average = Procedures are defined and personnel have been trained, but there are no</i></p>				

<p>resources to implement procedures; <i>High = Procedures exist, personnel have been trained, and resources are in place to implement procedures.</i></p>				
<p>Does the plan address transport of patients and logistical support? Verify that the facility has vehicles available (owned by the facility or from other sources) as well as logistical support for patient transport. <i>Low = Vehicles for patient transport and logistical support are not available or there is no relevant documentation; Average = There are insufficient vehicles and/or insufficient logistical support; High = Sufficient vehicles and logistical support are available.</i></p>				
<p>Is coordination in place with other facilities in the local health services network and with entities providing pre-hospital emergency care? Ascertain that there are written protocols for this coordination and that facility personnel confirm that coordination is in place. <i>Low = Coordination plan is absent or there is no documentation that demonstrates coordination; Average = There is communication in the network, but there are no established procedures or protocols for disaster or emergency response; High = There is communication and coordination with other facilities in the health services network, and procedures and protocols are in place for disaster response.</i></p>				
<p>Is the health facility’s emergency contingency plan linked to the local emergency response plan? Verify that there is a written record that demonstrates this cooperation.] <i>Low = The plans are not linked or there is no documentation that demonstrates linkage; Average = Plans are linked but not operational; High = Plans are linked and operational.</i></p>				
<p>Does the disaster plan address specific procedure for referral and counter-referral of patients? Review specific procedures that include mechanisms for registering patients. <i>Low = Procedures do not exist or there is no documentation on the procedures; Average = Procedures exist but only on paper; High = Procedures are documented and personnel have been trained in process.</i></p>				
<p>Does the plan include procedures for communicating with the public and media?</p>				

<p>Verify that the plan states who is responsible for communicating with the public and the media. <i>Low = Procedures do not exist or there is no documentation that demonstrates procedures; Average = Procedures exist but personnel have not been trained; High = Procedures exist and personnel have been trained.</i></p>				
<p>What procedures are in place for staffing for disaster response during evening, weekend, and holiday shifts? Depending on the role of the facility in the health delivery network, review staffing procedures for nights, weekends, and holidays in case of emergencies and disasters. <i>Low = Procedures do not exist or there is no documentation that demonstrates procedures; Average = Procedures are in place but personnel have not been informed; High = Procedures are in place and personnel are aware of procedures</i></p>				
<p>Does the disaster plan address procedures for both internal and external evacuation of the facility? Verify that the plan includes evacuation procedures for occupants of the facility. <i>Low = Procedures do not exist or there is no documentation for procedures; Average = Procedures are in place but personnel have not been trained, and/or evacuation routes are not adequate; High = Procedures are in place, personnel have been trained, and evacuation routes are clearly marked and unobstructed.</i></p>				
<p>Are health personnel prepared to act in disaster situations? Confirm that there is an ongoing training program and that the training is carried out. Verify and validate the level of training directly with staff. <i>Low = Personnel are not trained or there is no training program; Average = There is sporadic training but less than half of the staff is trained; High = There is an ongoing training program and more than 85% of personnel are trained.</i></p>				
<p>Does the facility have an emergency warning system and are personnel trained in the system? Confirm that the facility has an emergency warning system and that staff have been trained to respond appropriately. <i>Low = Emergency warning system does not exist or there is no documentation for system; Average = Emergency warning system is in place but personnel have not been trained in</i></p>				

<p>system; <i>High = Emergency warning system is in place and personnel have been trained in how to respond.</i></p>				
<p>Does the facility have an alarm system and have staff been trained to respond? Verify that the facility has an alarm system in place and that all staffs in the facility are trained to respond. <i>Low = Alarm system does not exist or there is no documentation about system; Average = Alarm system is in place but personnel have not been trained in system; High = Alarm system is in place and personnel have been trained in how to respond.</i></p>				
<p>Has the facility carried out emergency simulation exercises and drills in the last year? Confirm that simulation exercises and drills are conducted and their frequency. <i>Low = Emergency simulation exercises do not take place or there is no documentation about exercises; Average = Emergency simulations are carried out but not each year; High = Emergency simulations are carried out at least once each year and the plan is updated according to the outcome of the exercises.</i></p>				
<p>Contingency plans for medical treatment in disasters</p>				
<p>Are contingency plans in place for different types of events? Confirm that specific plans are in place, that they are updated, that staff has been trained for specific contingencies, and that the facility has the resources to implement the actions. <i>Low = Contingency plans do not exist or they exist only on paper; Average = Contingency plans are in place but they are not updated and/ or personnel have not been trained; High = Contingency plans are in place, they are updated, personnel have been trained, and there are resources to implement them.</i></p>				
<p>Plans for preventive maintenance and repair of essential services (lifelines)</p>				
<p>Is there a maintenance plan for the facility’s electrical system? Verify that the maintenance plan is in place and review the maintenance log; ensure that personnel are assigned and trained in maintenance, that appropriate tools are available, and that funds are budgeted for maintaining the system. The plan should address testing of alternative sources of available power (generators, batteries, power inverters, etc.).</p>				

<p><i>Low = The plan does not exist, or the plan is only on paper;</i> <i>Average = The plan exists but personnel are not assigned to and/or not trained in maintenance, and/or appropriate tools are lacking, and/or funds have not been budgeted for maintenance; High = The plan exists, personnel are assigned to and trained in maintenance, appropriate tools are available, and funds have been budgeted for maintenance activities.</i></p>				
<p>Is there a maintenance plan for the facility’s drinking water supply system? Verify that the maintenance plan is in place and review the maintenance log; ensure that personnel are assigned and trained in maintenance, that appropriate tools are available, and that funds are budgeted for maintaining the system. <i>Low = The plan does not exist, or the plan is only on paper;</i> <i>Average =The plan exists but personnel are not assigned to and/or not trained in maintenance, and/or appropriate tools are lacking, and/or funds have not been budgeted for maintenance; High = The plan exists, personnel are assigned to and trained in maintenance, appropriate tools are available, and funds have been budgeted for maintenance activities.</i></p>				
<p>Is there a maintenance plan for the facility’s communications system? Verify that the maintenance plan is in place and review the maintenance log; ensure that personnel are assigned and trained in maintenance, that appropriate tools are available, and that funds are budgeted for maintaining the system. <i>Low = The plan does not exist, or the plan is only on paper;</i> <i>Average = The plan exists but personnel are not assigned to and/or not trained in maintenance, and/or appropriate tools are lacking, and/or funds have not been budgeted for maintenance; High = The plan exists, personnel are assigned to and trained in maintenance, appropriate tools are available, and funds have been budgeted for maintenance activities.</i></p>				
<p>Is there a maintenance plan for the facility’s wastewater system? Verify that the maintenance plan is in place and review the maintenance log; ensure that personnel are assigned and trained in maintenance, that appropriate tools are available, and that funds are budgeted for maintaining the system. <i>Low = The plan does not exist, or the plan is only on paper;</i></p>				

<p><i>Average = The plan exists but personnel are not assigned to and/or not trained in maintenance, and/or appropriate tools are lacking, and/or funds have not been budgeted for maintenance; High = The plan exists, personnel are assigned to and trained in maintenance, appropriate tools are available, and funds have been budgeted for maintenance activities.</i></p>				
<p>Does the facility have a maintenance plan for its fire protection/suppression system? Verify that the maintenance plan is in place and review the maintenance log; ensure that personnel are assigned and trained in maintenance, that appropriate tools are available, and that funds are budgeted for maintaining the system. <i>Low = The plan does not exist, or the plan is only on paper; Average = The plan exists but personnel are not assigned to and/or not trained in maintenance, and/or appropriate tools are lacking, and/or funds have not been budgeted for maintenance; High = The plan exists, personnel are assigned to and trained in maintenance, appropriate tools are available, and funds have been budgeted for maintenance activities.</i></p>				
<p>Availability of medications, supplies, instruments and equipment for disaster situations</p>				
<p>Are there reserves of medications available for emergency response? Verify the availability of medicines for emergencies. <i>Low = There is no reservoir and there is no documentation demonstrating; Average = Reserves of medications are sufficient only for daily, conventional use; High = There are sufficient reserves of medications for emergency response.</i></p>				
<p>Does the facility have reserves of supplies and treatment materials for emergency response? Ascertain whether the facility has sufficient supplies in reserve for emergencies. <i>Low = There are no reserves or there is no documentation regarding emergency supplies; Average = Reserves are adequate only for regular, daily use; High = Sufficient reserves are in place for emergency response.</i></p>				
<p>Does the facility have a reserve of instruments for emergency response? Ascertain whether the facility has sufficient instruments in reserve for emergencies. <i>Low = There are no reserves or there is no documentation regarding emergency instruments;</i></p>				

<p><i>Average = Reserves are adequate only for regular, daily use; High = Sufficient reserves are in place for emergency response.</i></p>				
<p>Does the facility have life support equipment? Depending on the facility’s level of complexity, evaluators should ascertain the presence and coverage of life support equipment. <i>Low = The facility does not have this equipment;</i> <i>Average = Equipment is available but there is only enough for regular, daily use;</i> <i>High = Facility has sufficient equipment for use in an emergency or disaster.</i></p>				
<p>Does the facility have personal protection equipment (PPE) (disposable for epidemics)? Check the facility’s supply of disposable personal protection equipment for staff working in areas of initial contact and treatment. <i>Low = The facility does not have this equipment or there is no relevant documentation;</i> <i>Average = Reserves of this equipment are only sufficient for regular, daily use;</i> <i>High = Facility has sufficient equipment for use in an emergency or disaster.</i></p>				
<p>Are the facility’s storage areas and warehouses protected from effects of earthquakes, flooding, fire, and strong winds? Ensure that storage areas are protected from the effects of earthquakes, flooding, fire, and strong winds, and that supplies are protected. <i>Low = Storage areas are not protected from hazards;</i> <i>Average = Only half of storage areas are protected;</i> <i>High = Storage areas are well protected.</i></p>				
<p>Are supplies and equipment protected from hazards? Ensure that supplies and equipment are protected from the effects of earthquakes, flooding, fire, and strong winds, rodents etc. <i>Low = 20% or less of supplies and equipment are protected from being damaged should shelving collapse or overturn;</i> <i>Average: 20% to 80% of supplies and equipment are protected from being damaged should shelving collapse or overturn;</i> <i>High = More than 80% of supplies and equipment are protected because shelves are stable, contents are secured, and/or shelf bracing is not needed.</i></p>				

Comments on Section. The evaluator should use the space below to comment on the results of this section, and provide his/her name and signature.

.....
.....

Name of Evaluator(s).....

Signature of Evaluator

VI. Health Facility Vulnerability Self-Assessment Tool

Direction

This Health Sector Self-Assessment tools will be used by EMSD Officials or Health center based officials to do the basic Structural, Non-structural, Functional and Environmental assessment of the health facilities. Reports and findings from the self assessment of Health Sector will be submitted to Emergency Medical Services Division (EMSD), DMS, MoH. EMSD will then review the report to determine the need of extensive Vulnerability Assessment of the Health Facilities the standard Vulnerability Assessment Team in accordance with the Guideline on Vulnerability Assessment of Health Facilities.

Note: Refer Annexure III of the Guideline on Vulnerability Assessment for the interpretations of the questions.

<p>Basic Information</p> <p>Facility name: _____</p> <p>Type (tick one): <input type="checkbox"/> National RH <input type="checkbox"/> Regional RH <input type="checkbox"/> District Hospital <input type="checkbox"/> BHU-I <input type="checkbox"/> BHU-II <input type="checkbox"/> Other (specify) _____</p> <p>Type of Building: <input type="checkbox"/> RCC/Concrete building <input type="checkbox"/> Rammed/mud earthed building <input type="checkbox"/> Stone Masonry <input type="checkbox"/> Other (specify) _____</p> <p>No. of Stories: _____</p> <p>Name of the unit assessed: <input type="checkbox"/> Main building <input type="checkbox"/> Staff quarter <input type="checkbox"/> Stores <input type="checkbox"/> Others (Specify) _____</p> <p>Type of Assessment: <input type="checkbox"/> Pre-disaster <input type="checkbox"/> Post-disaster</p> <p>Year Built: _____</p> <p>Open Ground Floor: Yes / No Construction Drawings Available: Yes / No</p> <p>Date: _____</p>	<p>Plan View: <i>Sketch a shape of the building (L shape, H shape, Square shape, etc.)</i></p> <hr/> <p>PHOTOGRAPH <i>(or specify photograph numbers)</i></p>
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1. Structural and Architectural Assessment

Sl. no	Indicator /Question	Response		
		Yes	No	Remarks
1	Has there been structural damage to the facility in the past? If yes, specify the cause and damages in the remark.			
2	Are the past damages mitigated? If yes, mention the actions taken in remark			
3	Is there any remodeling, regular maintenance and/or additional structure built apart from mitigating the previous damages? If yes, mention in the remark			
4	Are the buildings attached to each other? If no, mention how far apart the buildings are.			
5	Was the structure able to withstand the effects of a variety of natural hazards (earthquake and wind storm)?			
6	Are there any visible damages on the structure during the assessment? If yes, specify in the remark			
7	Are doors or entrances/exit to the facility secure and functional?			
8	Are windows/glasses of the health facility secure and in good condition?			
9	Are surrounding walls, bars, facades, and fencing around the facility in good condition and will not have a negative impact on the facility?			
10	Are roofs and roofing (including trusses, bracing, gutter) safe/secure and in good condition?			
11	Are there sealing for attic gaps (space between the roof and ceiling) in all direction?			
12	Are staircases, ramps, corridors clear of obstacles for free movement?			
13	Are staircases and/or ramps safe and in good			

	condition?			
14	Are the lifts safe and functional? (Only if applicable)			
15	Are internal walls or partitions safe and in good condition (dampness, cracks, moving)?			
16	Are the facility's false ceilings secure/safe and in good condition?			
17	Is flooring safe and in good condition (no cracks, uneven or slippery areas)?			
18	Are other architectural elements of the facility safe and in good condition?			
19	Is there fire extinguishers/firefighting equipment located in high-risk areas?			
20	Are fire extinguishers/firefighting equipment functional, easy to access, are well anchored, and are properly labeled?			
21	Are there big obstacles (trees, utility poles, signs, walls) that could obstruct vehicle and pedestrian traffic outside of the facility?			
22	Is there adequate parking space with designated parking lines outside the facility?			

2. Non-structural Assessment

Sl. no	Indicator /Question	Response		
		Yes	No	Remarks
A. Electrical Systems				
1	Has health facility's electrical system been affected? If yes, specify in the remarks			
2	Is there an alternative source that can provide an uninterrupted supply of electricity for minimum of 3 days in critical areas of the facility? If yes, specify			
3	Is the alternative power source adequately protected from natural hazards?			

4	Is the facility's electrical system protected from hazards?			
5	Does the health facility have proper electrical earthing and lighting arrestors?			
6	Does the health facility have lighting arrestors installed?			
7	Is the health facility's electrical wiring system properly insulated/ installed?			
8	Is the lighting system (fan, AC, tube-light sets and etc) secure in critical areas of the facility?			
9	Are Heating, Ventilation and Air Conditioning (HVAC) system functional? (Only if applicable)			
B. Telecommunication System				
1	Are communications systems in the facility functional?			
2	Is there a backup communication system in the health facility?			
3	Are communication equipment and cables protected?			
C. Water Supply System				
1	Has the health facility's water supply been affected? If yes, specify in the remarks			
2	Is there a permanent water reserve that can supply at least approximately 20 liters per day per patient for a three-day period? (WHO)			
3	Are water storage locations protected and tanks in good condition?			
4	Is there an alternative water supply system that can supplement the main local distribution system?			
5	Is the internal water distribution system in proper condition?			
6	Is there water quality control program in place?			
D. Fuel Storage (Gasoline, diesel)				

1	Is there a fuel storage system in the health facility?			
2	Is fuel stored in safe conditions?			
3	Is there a five-day fuel reserve?			
4	Is there fire extinguisher near the fuel store?			
E. Medical gases (oxygen)				
1	Are there enough medical gases to last for at least three days?			
2	Are medical gas cylinders/tanks properly anchored?			
3	Are medical gas cylinders/tanks stored in safe areas?			
4	Are the filled and empty gas cylinders/tanks stored separately?			
5	Are the gas cylinders/tanks periodically checked for the leakages?			
6	Are central medical gas supply system periodically checked for leakages? (Only if applicable)			
7	Is there proper signage for the medical gas cylinders/tanks storage areas?			
F. Sanitation System				
1	Does the health facility have proper wastewater drainage system?			
2	Are waste collection sites (regular and medical waste) protected?			
3	Are the medical wastes segregated at the collection site?			
4	Are the medical infectious wastes treated before disposal?			
5	Are the expired drugs and other hazardous medical wastes disposed properly?			
G. Storm drainage system				
1	Is there proper storm drainage system in the			

	premises of the health facility?			
I. Furniture and fittings, office and storeroom equipment				
1	Are shelves anchored and are contents protected?			
2	Are there falling objects placed on top of the shelves?			
3	Is office equipment secured/anchored?			
4	Are there shelves and other heavy/large objects near the entrance/exit?			
5	Are furniture and fittings secured and placed appropriately?			
J. Medical equipment and supplies used for diagnosis and treatment				
1	Are stationary medical equipment anchored and protected?			
2	Are brakes applied on the wheels of mobile medical equipment?			
3	Are there heavy/large medical and laboratory equipment near the entrance/exit?			
4	Are the chemicals/reagents/drugs secured from falling?			
5	Are medical equipment functional?			
6	Is periodic maintenance of medical equipment carried out?			

3. Functional Assessment

Sl. no	Indicator /Question	Response		
		Yes	No	Remarks
A. Organization of the health facility's disaster committee				
1	Does the facility have a disaster committee?			
2	Is each member of the disaster committee aware of his/her specific responsibilities?			
3	Has a space been designated and equipped for the facility's Emergency Operations Center (EOC)?			
4	Is an updated telephone directory of authorities (internal and external) and other contacts			

	available?			
B. Contingency plans for internal and external disasters				
1	Does the facility have a health emergency and disaster contingency plan?			
2	Does the health emergency and disaster contingency plan address both internal and external emergencies?			
3	Does the plan identify specific actions that will strengthen critical care services in the facility?			
4	Are there procedures for activating and deactivating the plan and are personnel familiar with procedures?			
5	Does the plan address special administrative procedures for disasters?			
6	Have funds been specifically allocated for disaster management?			
7	Are procedures in place for expanding space when needed for emergency response and/or expanding space for critical care services?			
8	Does the plan include procedures for admitting patients in the event of emergencies, including forms and protocols for treating mass casualties?			
9	Are procedures in place for triage, resuscitation, stabilization, and treatment?			
10	Does the plan address transport of patients and logistical support?			
11	Is coordination in place with other facilities in the local health services network and with entities providing pre-hospital emergency care?			
12	Is the health facility's disaster response plan linked to the local emergency response plan?			
13	Does the disaster plan address specific procedure for referral and counter-referral of patients?			
14	Does the plan include procedures for			

	communicating with the public and media?			
15	Is there disaster response staffing plan to respond during evening, weekend, and holiday shifts?			
16	Does the disaster plan address procedures for both internal and external evacuation of the facility?			
17	Does the facility have signs showing evacuation routes?			
18	Does the facility have designated evacuation/assembly sites?			
19	Does the facility have an emergency warning/alarm system?			
20	Are health facility's personnel trained to respond to the warning/alarm system?			
21	Are contingency plans in place for different types of events?			
22	Does the health facility carry out emergency simulation exercises and drills annually?			
C. Plans for preventive maintenance and repair of essential services (lifelines)				
1	Is there a maintenance plan for the facility's electrical system?			
2	Is there a maintenance plan for the facility's drinking water supply system?			
3	Is there a maintenance plan for the facility's communications system?			
4	Is there a maintenance plan for the facility's wastewater system?			
5	Does the facility have a maintenance plan for its fire protection/suppression system?			
6	Does the facility have a maintenance plan for its central medical gas supply system?			
7	Does the facility have a maintenance plan for its HVAC system?			
D. Availability of medications, supplies, instruments and equipment for disaster situations				
1	Are there reserves of medications available for			

	emergency response?			
2	Does the facility have reserves of supplies and treatment materials for emergency response?			
3	Does the facility have a reserve of instruments for emergency response?			
4	Does the facility have life support equipment?			
5	Does the facility have personal protection equipment (PPE) (disposable for epidemics)?			
6	Are the facility's storage areas and warehouses protected from effects of earthquakes, flooding, fire, and strong winds?			
7	Are supplies and equipment protected from hazards (humidity, dust, heat, rodents etc)?			

4. Environmental Assessment

1	Is there any flowing river/stream nearby the health facility? If yes, mention how far in the remark			
2	Is the health facility subjected to land slide/heavy erosion?			
3	Is the health facility free of potential falling boulders/big trees and/or other objects?			
4	Is the health facility situated nearby fuel station? If, yes mention how far in the remark			
5	Are the electricity transmission lines running above the health facility?			
6	Are there any industries nearby the health facility? If yes, mention how far in the remark			

Any other comments:

Name of evaluator(s):

Signature of evaluator