Model Green and Climate-Resilient Health Facilities: A Guidebook for Assessing and Prioritizing Sustainable Healthcare Measures

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National Centre for Disease Control
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Contents

Introduction

In the face of a changing climate and a growing global population, the need for sustainable, climate-resilient healthcare facilities has never been more pressing. As our world grapples with the challenges of environmental degradation and the health impacts of a warming planet, the healthcare sector must rise to the occasion and lead the way toward a healthier, greener future.

The impacts of climate change, including extreme weather events, rising temperatures, sea levels, and CO2 levels, are profoundly affecting communities and ecosystems worldwide. Healthcare contributes to greenhouse gas emissions through energy consumption, transport, and product manufacture, use, and disposal, and is responsible for 4.4% of global net emissions. Concurrently, the healthcare sector faces challenges such as increasing burden of climate sensitive illnesses such as cardiovascular diseases, respiratory illnesses, waterborne and vector-borne diseases subsequently leading to shortage of health resources and financial constraints. This further underscore the need for the health sector to take immediate climate action, not only by providing healthcare services to those impacted by the climate crisis and its causes but also by undertaking mitigation and adaptation measures and radically reducing its own emissions.

It is in this crucible of challenges and opportunities that the concept of sustainable and climate resilient healthcare has gained prominence. Such facilities will not only be able to reduce their own contribution to carbon emissions but also play a vital role in promoting community health and resilience to extreme weather events. The capacity of healthcare facilities to withstand and respond to the increasing frequency and severity of climate-related events is crucial for maintaining patient care, even in the face of adversity. By incorporating climate-resilient design and practices, healthcare facilities can maintain operational continuity, ensuring the delivery of critical healthcare services when they are needed most.

The National Programme for Climate Change and Human Health (NPCCHH), a flagship programme of the Ministry of Health and Family Welfare (MoHFW) was launched in 2019 to strengthen the health system response to climate change in India. The programme recently launched the updated Guidelines for Green and Climate Resilient Health Facilities in February 2023.

1. About the Guidebook

The **'Model Green and Climate-Resilient Health Facilities: A Guidebook for Assessing and Prioritizing Sustainable Healthcare Measures'** is a comprehensive resource for healthcare professionals, health administrators, managers, community health workers and policymakers who are committed to transforming healthcare infrastructure into sustainable, climate-resilient assets. The guidebook describes what a model green and climate resilient health facility should be, based on the NPCCHH guidelines. It will facilitate continuous improvement, benchmarking, and accountability, ensuring that sustainability considerations are integrated into all stages.

The Green and Climate Resilient (GCR) checklist tool covers the domains of energy efficiency and solarization, water management, waste management, smart and green building, and climate resilient measures which need to be implemented for developing a model green and climate resilient health facility. It provides a structured framework for identifying opportunities for improvement and

implementing targeted actions to enhance the environmental and climate performance of our facilities.

This guidebook aims to provide:

- Step-by-step guidance on conducting a baseline assessment: Guide healthcare professionals such as Medical Officers (MOs), Community Health Officers (CHOs), Auxiliary Nurse Midwives (ANMs) and health programme managers to conduct a baseline assessment of health facilities. This assessment will provide an understanding of the existing gaps and help plan the next steps for development of model green and climate resilient health facilities.
- Prioritization: Guidance to healthcare staff for prioritization of health facilities for implementation of green and climate resilient measures based on existing vulnerabilities and local capacities. This will also ensure appropriate utilization of resources.
- Local Adaptation: The guidebook provides guidance that can be tailored to the specific needs and constraints of each facility at every level of service delivery, ensuring flexibility in implementation.
- Regulatory Compliance: Help healthcare workers and managers navigate regulations and meet health infrastructure standards such as Association of Healthcare Providers, Building Research Establishment Environmental Assessment Method (BREEAM), Indian Green Building Council, Leadership in Energy and Environmental Design, Green Rating for Integrated Habitat Assessment (GRIHA).

1.1. Rationale for developing Green and Climate Resilient Healthcare Facilities

Healthcare facilities, despite their role as pillars of community well-being, are not immune to the far-reaching impacts of climate change and other environmental stresses. Climate change can impact health facilities in a myriad of ways including increase in heat related illnesses, respiratory illnesses, food and water borne diseases and also damage to infrastructure, increase in energy and water requirements due to extreme weather events. Climate-resilient and environmentally sustainable health care facilities ensure the provision of high quality of care and accessibility of services, and by helping reduce facility costs, also contribute to better affordability. Paradoxically, healthcare facilities can also contribute to environmental degradation and have adverse effects on public health such as greenhouse gas emissions produced during transportation, heating and cooling and improper treatment of healthcare waste further leading to water and soil pollution.

As per WHO, Climate-resilient and environmentally sustainable health care facilities can anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, so as to bring ongoing and sustained health care to their target population and protect the health and well-being of future generations.

2. Objective of the GCR Assessment Checklist

The GCR assessment checklist is developed with the aim to:

- Assess the status of health care facilities for implementation of green and climate resilient measures.

- Identify gaps and undertake next steps to develop green and climate resilient health care facilities based on findings.

3. Features of the GCR Assessment Checklist

The checklist has been developed based on the existing NPCCHH guidelines on green and climate resilient healthcare facilities and the Indian Public Health Standards (IPHS) 2022 guidelines. The key features of GCR assessment checklist includes:

- Checklist is developed under five themes - energy efficiency and solarization, water management, waste management, smart and green building and climate resilient measures classified under 71 indicators considered for the assessment.
- Every indicator is scored based on specific evaluation criteria depending upon the type of Health Care Facility (HCF) as per IPHS 2022 guidelines.
- The aggregate score for the health facility shall be derived based on summation of score of five themes and shall be normalized for the different types of health facilities: Sub District Hospital (SDH), Primary Health Centers (PHCs), Community health centers (CHCs) and Sub Centres (SCs).
- The facility shall be categorized under following categories based on the normalized score.

3.1. Scoring Methodology

All the indicators under five themes shall be assessed based on their applicability on respective facility. The assessment of all the indicators is based on the essentiality and scored accordingly. Few indicators are not applicable to facilities and hence the final score of evaluation shall be based on type of facility. All the indicators are grouped under different criteria under different themes as illustrated in table below. A score shall be assigned to each indicator as zero or one or two. The detailed procedure to evaluate the health facility for respective indicator is illustrated in Annexure A. The composite score of the facility shall be normalized in the scale of 0 -100.

As this assessment is aligned with Kayakalp guidelines 2021, the assessor may allocate the same score given during Kayakalp assessment (if done within last 1 year) for same indicators used in this assessment.

S.No.	Theme	Criteria	Indicators
1	Energy Efficiency and Solarization	Energy Conservation	8
		Energy Generation	2
		Knowledge and Capacity Building	3
2	Water Management	Water Quality	4
		Water Conservation	5
		Wastewater Treatment	4
		Knowledge and Capacity Building	2
3	Waste Management	Waste Minimization	3
		Waste Handling & Treatment	8
		Knowledge and Capacity Building	2
		Smart Services	5

4	Smart & Green Building	Safety Services	8
		Green Measures	5
5	Climate Resilient measures	Structural Elements	3
		Non-Structural Elements	7
		Knowledge and Capacity Building	6

Grading Methodology

Recommendation shall be based on the normalized score of the facility and score achieved in respective themes:

- Any health facility scoring above 85 in the GCR assessment would be termed as least vulnerable and highly sustainable and would require minimum intervention for climate adaptation.
- Any health facility scoring between 85 and 56 would be classified as moderately vulnerable and moderately sustainable.
- Any health facility scoring between 55 and 26 would be classified as highly vulnerable and less sustainable.
- Any health facility scoring 25 or lesser will be classified as severely vulnerable and least sustainable. Such facilities require maximum resource allocation for climate adaptation and will be identified as top priority for implementation of green and climate resilient measures.
- Based on the GCR assessment, we can term all those health facilities scoring above 85 as **'Model Green and Climate Resilient Health Facilities'**. All the facilities scoring lesser than 85 will be targeted for implementation of green and climate resilient measures.

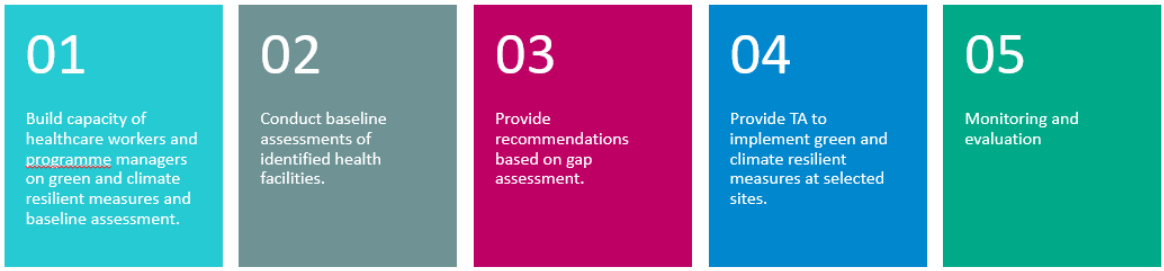
Facility Grading	Facility Category	Normalized Score
Grade 1	Least climate vulnerable and highly sustainable (Model Green and Climate Resilient Facility)	>85
Grade 2	Moderately climate vulnerable and moderately sustainable	56-85
Grade 3	Highly climate vulnerable and less sustainable	26-55
Grade 4	Severely climate vulnerable and least sustainable	≤25

3.2. Green and Climate Resilient Health Care Facilities

Broad steps to be undertaken for the development of model green and climate resilient health care facilities:

1. Building the capacity of healthcare workers and program managers on how to conduct a baseline assessment of health care facilities and orienting them on the health co-benefits of developing model green and climate resilient health facilities.

2. Conduct baseline assessments of health facilities identified for transforming into model green and climate resilient health facilities.
3. Provide recommendation based on the gap assessment and prioritization of actions.
4. Provide technical assistance in coordination, documentation, development, and implementation of green and climate resilient measures.
5. Continuous annual monitoring to assess the changes and growth of health facility in term of sustainability and climate resilience.



3.3. Outcome of GCR Assessment

The application of GCR assessment checklist at facility level will facilitate health workers and programme managers in data-driven decision making and resource management. It will also aid in tracking the progress of implementation measures and provide guidance for development of sustainable green and climate resilient health facilities.

4. Recommendation system

Based on the score attained for each indicator during assessment of the health facility, the recommendations shall be autogenerated at the end of the assessment. The methodology of recommending the suggestive actions for developing green and climate resilient health facilities, has been developed based on two areas of impact of respective indicator i.e. mode of impact and magnitude of impact[1]. Mode of impact refers to whether the indicator has a direct or indirect impact on the environment, whereas magnitude will describe the scale of the impact of the indicator on the environment.

The magnitude of impact will be classified into three categories- high, medium and low impact. The weightage shall be assigned to each indicator based on mode and magnitude of impact on environment. Direct and indirect impact indicators shall be assigned 1.0 and 0.5, respectively and 1.0, 0.66 and 0.33 for high, medium and low impact indicators based on magnitude, respectively. The indicator with direct and high impact shall be considered as a high priority action and the indicator with indirect and low impact shall be considered as a low priority action. The identified mode and magnitude of impact of each indicator is illustrated in Annexure B. The health official may also consider the geological challenges and administrative constraints before selecting the priority action points for the development of the green and climate resilient health facility.

[1] Grafakos, S., Gianoli, A., & Tsatsou, A. (2016). Towards the development of an integrated sustainability and resilience benefits assessment framework of urban green growth interventions. *Sustainability*, *8*(5), 461.

5. Reduction in carbon emissions

The reduction in carbon emissions in health facility operations can be directly measured for those measures implemented having a direct mode of impact, and either high or medium magnitude of impact on the environment. The reduction in energy consumption by replacement of conventional equipment with advanced and energy efficient equipment, is measured from high impact indicators implemented in the health facility, as kW of energy conserved from standard hourly operation. The reduction in carbon emissions by implementation of measures with medium magnitude impact on the environment is evaluated based on conservation of natural resources such as water and fossil fuels and the subsequent reduction in energy flow rate. The key indicators with projected reduction in carbon emissions based on relevant literature are mentioned in table below.

Theme	Indicator	Carbon Saving
Energy Conservation	Installation of LED lights	Save 6.38 kg of CO_2/year by replacing 10W CFL with LED (Average operation of 5 hours a day)[2]
	Eco-friendly appliances	Save 90,900 kg of CO_2 equivalent by replacing CFC with HCFC (calculated for CFC-12 and HCFC-22)[3]
	Energy Efficient appliances	Save 221.76 kg CO_2/year by replacing 1 star AC to 3 star and 393.42 kg CO_2/year by replacing with 5-star AC (1 ton AC 8 hours operation for 180 days in a year)[4]
	Installation of occupancy sensor-based lighting	Save 14.1 kg CO_2/year per 10W LED bulb having 12-hour operation[5]
	Solar Energy	Annual saving 6.716 metric tons CO_2/year for generating 5kW of energy[6]
Water Conservation	Optimal utilization of water	Save 3.22 kg of CO_2 per 1000 litre of saving water (Energy saving w.r.t. water treatment, water distribution and storage)[7]
	Rainwater Harvesting (RWH) system	Save 3.22 kg CO_2 per 1000 litre of water conservation[8]

[2] https://www.theclimategroup.org/led

[3] https://www.epa.gov/climate-hfcs-reduction/management-certain-hydrofluorocarbons-and-substitutes-under-subsection-h

[4] https://beestarlabel.com/Content/Files/Session_2.pdf

[5] https://www.rayzeek.com/blog/do-motion-sensor-light-switches-save-energy#:~:text=Given%20a%20common%20LED%20power,to%202.4%20hours%20per%20day. https://www.mdpi.com/2571-5577/1/3/23https://www.mdpi.com/2571-5577/1/3/23

[6] https://www3.epa.gov/ttnchie1/conference/ei20/session5/mmittal.pdf

[7] https://www.waterwise.org.uk/wp-content/uploads/2018/02/Energy-Saving-Trust-2009_Quantifying-the-Energy-and-Carbon-Effects-of-Water-Saving_Full-Technical-Report.pdf

[8] https://wint.ai/wp-content/uploads/2022/02/White-paper-Carbon-Impact-of-Water-Consumption-Final.pdf

6. Summary

The development of a practical guidebook for healthcare workers and health program managers to implement green measures and create climate-resilient healthcare facilities is not just a necessity but an urgent imperative. Such model green and climate resilient health facilities will play a crucial role in safeguarding human health while minimizing their impact on the environment. By equipping healthcare professionals with the knowledge, resources, and practical guidance they need, we can accelerate the transition to sustainable and climate-resilient healthcare systems and work towards achieving India's long-term goal of reaching net zero by 2070.

This GCR assessment will facilitate health workers and programme managers in data-driven decision making and resource management. It will also aid in tracking the progress of implementation measures and provide guidance for development of model green and climate resilient health facilities. By comprehending healthcare facilities' vulnerabilities to environmental stressors and making investments in climate resilience, it is possible to avert catastrophic damage due to extreme weather events, leading to long-term cost savings and potentially preserving lives. Also, this way healthcare facilities can continue to provide uninterrupted vital care while also contributing to a healthier and more sustainable environment for all.

GCR CHECKLIST:

General Information

GCR Assessment Form		
S. No	**Particulars**	**Details**
1	Name of the Health Centre visited	
2	Name of Health Facility Incharge	
3	Designation of Incharge	
4	Phone No. and Email ID of Incharge	
5	Date of assessment	
6	Address of the health facility visited	
7	Village/Town	
8	Taluka	
9	District	
10	State	
11	Pin Code	
12	GPS coordinates of the facility	
13	Has the facility been Kayakalp certified within the last three years?	Yes/No
14	Has the facility been NQAS certified within the last three years?	Yes/No
15	Type of health facility	SC/PHC/CHC/SDH/DH
16	Construction year of facility	
17	Name of the assessor	

18	Designation of the assessor	

Facility Particulars

CR Assessment Form						
S. No	**Particulars**	**Details**				
1	No. of Beds in the facility					
2	Specify the source of water in the facility	Tankers	Groundwater	Municipal Supply		
3	Wastewater generated in facility	KLD				
4	Wastewater treatment method available in facility	ETP	Septic tank/Soak Pits	Biodigester (Hint: New construction is not recommended)		
5	BMW treatment method in facility	Burial Pits	Agreement with CBMWTF	Auxillary Vaccine Delivery		
6	Select the type of solar panel installed	On Grid	Off Grid	Hybrid		
7	Energy demand of facility as per sanctioned load (as mentioned in energy bill)	KWh				
8	At what altitude is your healthcare facility located	Below mean sea level(low lying plains)	0-1000 ft above mean sea level,	1000-5000 ft above mean sea level	Beyond 5000 ft above mean sea level	
9	How far is your healthcare facility from your nearest coastline	>20km	10-20km	5-10km	1-5km	0-1km

10	How far is the healthcare facility from a water body such as river/channel/lake/canal or estuary	>4km	3-4km	2-3km	1-2km	0-1km
11	In case of flash flood/flood/heavy rainfall does the hospital premise or surroundings usually stay inundated?	Yes/No				
12	Which of the following levels of damage best describe the impact of past disasters on the healthcare facility's infrastructure?	very low : Fine cracks in plaster; fall of small pieces of plaster (about 10% of wall area)	low: Fall of fairly large pieces of plaster (say upto 50% of wall area); small cracks in walls (less that 6mm wide)	moderate: Large and deep cracks in walls; loss of belongings; damage of electrical fittings.	high: Large and deep cracks in walls; loss of belongings; damage of electrical fittings.	very high: Including collapse of buildings; floating away of sheets, thatch, etc.; scouring of foundations, severe damage of lifeline structures and systems.
13	Which of the following levels of damage best describe the impact of past disasters on the healthcare facility's operations/infrastructure?	Low impact: Access to only essential health services at the healthcare facility.	Moderate impact: Access to only OPD or referral/outreach services.	High impact: Facility not able to provide any health service.		
14	Is the facility connected to motorable roads all year round?	Yes/No				
15	How far is your nearest referral healthcare facility?	>20km (very far)	10-20km (far)	5-10km (accessible by public transport)	1-5km (nearby,	0-1km (very near, walking distance)
16	When was the last occurrence of cyclones in the facility catchment area?	Never occurred	Current year	1-2 years ago	More than 3 years ago	

17	When was the last occurrence of floods in the facility catchment area?	Never occurred	Current year	1-2 years ago	More than 3 years ago	
18	When was the last occurrence of thunder storm and lightning in the facility catchment area which led to damage to infrastructure?	Never occurred	Current year	1-2 years ago	More than 3 years ago	
19	When was the last occurrence of heatwave in the facility catchment area?	Never occurred	Current year	1-2 years ago	More than 3 years ago	
20	When was the last occurrence of droughts in the facility catchment area?	Never occurred	Current year	1-2 years ago	More than 3 years ago	
21	When was the last occurrence of earthquake in the facility catchment area?	Never occurred	Current year	1-2 years ago	More than 3 years ago	
22	How many outbreaks of waterborne diseases were observed in the facility catchment area in last 3 years?	Never occurred	1 to 5	5 to 10	more than 10	
23	How many outbreaks of vector borne diseases were observed in the facility catchment area in last 3 years?	Never occurred	1 to 5	5 to 10	more than 10	
24	Which seismic zone does the healthcare facility fall in?	Unknown/Seismic Zone I	Seismic Zone II	Seismic Zone III	Seismic Zone IV	known/Seismic Zone V
25	Which landslide zone does the healthcare facility fall in as per this map? https://www.bmtpc.org/topics.aspx?mid=56&Mid1=186	Unlikely	Low Risk zone	Moderate risk zone	High risk zone	Very high risk zone

26	Has the healthcare facility or its surrounding regions observed a landslide in the last five years?	No never	Before 5 years	Once in last five years	Twice in last five years	More than once in last 5 years
27	On an average, how much does the healthcare facility spend yearly on structural maintenance and retrofitting measures? (INR)	<5,000	5,000-10,000	10,000-20,000	20,000-50,000	>50,000
28	What is the average monthly footfall at the health facility in the last 1 year?	In absolute numbers				
29	What is the average monthly footfall at the health facility during and upto 1 month after any extreme weather event which took place in the last 1 year?	In absolute numbers				

Annexure A

Standard operating procedure for conducting Assessment

A. Energy Efficiency and Solarization

A1. Energy Efficiency

A 1.1 Status of installation of Light-Emitting Diode (LED) in the facility.

LED light sources include LED tube lights or linear LED light sources, standard LED bulbs. Incandescent or conventional light sources include conventional yellow light bulbs which contain filament and fluorescent tube lights which consume more electricity compared to LED tube lights.

Assessment Method: Observation (OB)

Record the total number of LED lights installed in the health facility, against the total no. of lights in the facility.

Scoring:

Sl No.	Type of Facility	LED Lights	Score
1.	SC	Fully Complied (>75% of lights replaced)	2
2.		Partially complied (40-75% of lights replaced)	1
3.		Not Complied (<40% of lights replaced)	0
4.	PHC, CHC, SDH and DH	Fully Complied (>90% of lights replaced)	2
5.		Partially complied (50-90% of lights replaced)	1
6.		Not Complied (<50% of lights replaced)	0

A 1.2 Use of eco-friendly cooling appliances in the facility.

Refrigerants can be liquid or gaseous compounds which are used in electrical appliances such as air conditioners and refrigerators for cooling purposes. Refrigerants can be Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Hydrofluorocarbons (HFCs) and Hydrocarbons (HCs). Amongst these the CFCs have been completely phased out in India since 2010, as per the Ozone Depleting Substance (Regulation and Control) Rules 2000 and the Ozone Depleting Substance (Regulation and Control) Amendment Rules 2014.

The following common CFC refrigerants have been phased out since 2010 and are not recommended for use by the Ministry of environment forest and climate change (Moefcc): R-11, R-12, R-13, R-111, R-112, R-113, R-114, R-115, R-115, R-211, R-212, R-213, R-214, R-215, R-216 and R-217

Assessment Method: Observation (OB)

Check for the refrigerant type mentioned on the front or back of the cooling appliance. Record the total no. of CFC free cooling appliances against the total no. of cooling appliances.

Or if the refrigerant type is not visible/appliance not easy to access during inspection, check for the manufacturing date of the equipment installed in rooms such as Cold chain and Immunization room, Laboratory, Operation theatre (OT), Labour room, Intensive Care Unit (ICU) and Blood bank.

A. If the manufacturing year of equipment is after 2010, we can assume that the equipment will be using CFC free refrigerants and shall be considered as compliant with the Ozone Depleting Substance (Regulation and Control) Amendment Rules, 2014.
B. If manufacturing year of equipment is prior to 2010, we can assume that the equipment may be using CFC refrigerants. Check the information available on the equipment regarding type of refrigerant used.

Electrical equipment to be assessed include refrigerator, ILR, air conditioners, chillers, process cooling.

Scoring:

Sl No.	Type of Facility	CFC free appliances	Score
1.	SC	Fully Complied (>75% of appliances are CFC free)	2
2.		Partially complied (40-75% of appliances are CFC free)	1
3.		Not Complied (<40% of appliances are CFC free)	0
4.	PHC, CHC, SDH and DH	Fully Complied (>90% of appliances are CFC free)	2
5.		Partially complied (50-90% of appliances are CFC free)	1
6.		Not Complied (<50% of appliances are CFC free)	0

A 1.3 Availability of energy efficient electrical appliances in the facility.

Electrical appliances with 3star and above ratings by the Bureau of Energy Efficiency (BEE) consume less electricity while providing the same or better performance compared to lower-rated products. A health facility using energy-efficient appliances will have reduced energy consumption and subsequently lesser expenditure on energy bills. The appliances to be checked for Bureau of Energy Efficiency (BEE) rating are refrigerators, heaters, Liquid-Crystal Display (LCD) screens and air conditioners.

Assessment Method: Observation (OB)
Record the number of electrical appliances such as refrigerators, heaters, LCD screen and air conditioners present in the health facility. Out of this, record how many have a 3 star and above BEE rating.

Scoring:

Sl No.	Type of Facility	Rating	Score

1.	SC	Fully Complied (>75% of facility equipment are rated 3 star and above)	2
2.		Partially complied (40-75% of facility equipment are rated 3 star and above)	1
3.		Not Complied (<40% of facility equipment are rated 3 star and above)	0
4.	PHC, CHC, SDH and DH	Fully Complied (>90% of facility equipment are rated 3 star and above)	2
5.		Partially complied (50-90% of facility equipment are rated 3 star and above)	1
6.		Not Complied (<50% of facility equipment are rated 3 star and above)	0

A 1.4 Availability of sufficient natural lighting in the facility.

Optimal natural lighting is necessary within the health facility to ensure smooth health service delivery during power outages and improved health outcomes.

The optimum illumination for health facility rooms is 100 Lux for X-ray/USG rooms and wards, 150 Lux for OPDs and nursing station,300 Lux for administrative block, laboratories and toilets, 500 Lux for Operation theatres (as per IPHS 2022 guidelines).

Assessment Method: Observation (OB)

Record the total number of rooms with sufficient natural illumination against the total number of rooms with exterior facing windows.

The light intensity in the room with exterior facing windows can be determined using an illuminance-based mobile application that works on proximity sensors. Record the light intensity on the application while standing in the center of the room, after switching off all lights in the room.

Link of the application is given below;

https://play.google.com/store/apps/details?id=com.doggoapps.luxlight

Any other similar application can also be used for the same purpose.

Scoring:

Sl No.	Type of Facility	Natural Lightning	Score
1.	SC	Fully Complied (>75% of rooms with exterior facing windows have sufficient natural light)	2
2.		Partially complied (40-75% of rooms with exterior facing windows have sufficient natural light)	1
3.		Not Complied (<40% of rooms with exterior facing windows have sufficient natural light)	0

4.	PHC, CHC, SDH and DH	Fully Complied (>90% of rooms with exterior facing windows have sufficient natural light)	2
5.		Partially complied (50-90% of rooms with exterior facing windows have sufficient natural light)	1
6.		Not Complied (<50% of rooms with exterior facing windows have sufficient natural light)	0

A 1.5 Availability of Occupancy Sensors (Motion Sensor) lighting in facility.

Occupancy sensor (motion sensor) lights automatically switch on or off by detecting the presence of people in the room. Such lights limit unnecessary utilization of electricity when someone is not in the room.

Assessment Method: Observation (OB).
Record the total number of occupancy-sensor based lights against the total number of lights in non-patient floors/rooms where people do not frequent such as washrooms, corridors, store rooms and staircases.

Scoring:

Sl No.	Type of Facility	Occupancy Sensors	Score
1.	SC	Fully Complied (>75% of lights in identified* area connected with sensors)	2
2.		Partially complied (40-75% of lights in identified* area connected with sensors)	1
3.		Not Complied (<40% of lights in identified* area connected with sensors)	0
4.	PHC, CHC, SDH and DH	Fully Complied (>90% of lights in identified* area connected with sensors)	2
5.		Partially complied (50-90% of lights in identified* area connected with sensors)	1
6.		Not Complied (<50% of lights in identified* area connected with sensors)	0

* washrooms, corridors, store rooms and staircases

A 1.6 Energy audit conducted in the facility.

Energy audit is conducted by certified energy auditors empaneled under Bureau of Energy Efficiency (BEE) to determine the energy consumption and suggest the methods for optimizing the energy consumption.

Assessment Method: Record Review (RR)

Check the energy audit document and date of audit. Audit document should not be older than 2 years.

Scoring:

Sl No.	Type of Facility	Energy Audit	Score
1.	SC	NA	NA
2.	PHC, CHC, SDH and DH	Completed once in last 2 year	2
3.		No audit done till date or older than 2 years	0

A 1.7 Installation of stabilizers/sub-meter to optimize the energy consumption in the facility.

Stabilizers/sub-meters regulate the voltage fluctuation and minimize the repair cost of electrical equipment having compressor or having energy load > 2kWh.

Assessment Method: Observation (OB)

Check the sub-meters/Stabilizers installed for the equipment/appliances having load greater than 2kWh in the facility and in rooms/departments having heavy load equipment such as operation theatres. emergency, radiology, ICU. Labour room, cold chain and immunization.

Record the number of heavy load appliances connected with stabilizer or sub-meter against the total number of appliances with load greater than 2kWh.

Scoring:

Sl No.	Type of Facility	Sub-Metering	Score
1.	SC	NA	NA
2.	PHC, CHC, SDH and DH	Fully Complied (>90% of high energy consuming equipment are optimized)	2
3.		Partially complied (50-90% of high energy consuming equipment are optimized)	1
4.		Not Complied (<50% of high energy consuming equipment are optimized)	0

A 1.8 Availability of Energy efficient Heating, ventilation and air conditioning (HVAC) system.

Heating, ventilation and air conditioning (HVAC) system controls the temperature, and humidity in the building through a centralized control panel.

Assessment Method: Observation (OB).

Check if the HVAC system is installed in the facility.

Scoring:

Sl No.	Type of Facility	HVAC system	Score
1.	SC, PHC	NA	NA
2.	CHC, SDH and DH	HVAC system installed in the facility	2
3.		HVAC system not installed not installed in the facility	0

If HVAC is available, then D 3.1 shall not be applicable to the facility.

A2. Energy Generation

A 2.1 Availability of functional solar panel system.

A solar power system consists of several components that work together to capture sunlight and convert it into electricity. The key system components of a typical solar power system include solar panels, inverter, mounting and racking system, solar charge controller (if using batteries), batteries (if off-grid or hybrid), grid connection (if grid-tied), electrical panel (breaker box), monitoring system, wiring, and cabling, grounding equipment.

Assessment Method: Observation (OB).

Observe whether solar panels are installed in the facility and fully functional. Solar panel can be considered functional if the power is being generated (as shown in Figure 1) and inverter is working at adequate voltage as per IS 12360[9] (As shown in Figure 2).

Figure 1The solar panel meter reading shows that 2.4 kWh energy was generated

[9] https://law.resource.org/pub/in/bis/S05/is.12360.1988.pdf

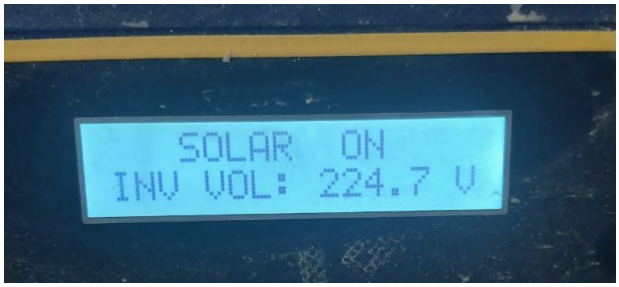


Figure 2The solar panel meter reading shows that the inverter is working at 224.7V

Scoring:

Sl No.	Type of Facility	Solar Panels	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (available and functional)	2
2.		Partially complied (available but not functional)	1
3.		Not Complied (not available)	0

A 2.2 Capacity of the installed solar panels.

Assessment Method: Record Review (RR)

Check the sanctioned electricity load (in kWh) in the latest electricity bill and check the capacity of solar plant (Mentioned on the back side of panel). Capacity of the solar plant should be equivalent to energy requirement of the facility, mentioned in the electricity bill, to make the facility operate during electrical shortfall.

Scoring:

Sl No.	Type of Facility	Solar Panels	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (Installed capacity is >90% of energy demand)	2
2.		Partially Complied (Installed capacity is 50-90% of energy demand)	1
3.		Not Complied (Installed capacity is <50% of energy demand)	0

A3. Knowledge and Capacity Building

A 3.1 Display of IEC materials on energy conservation measures.

Assessment Method: Observation (OB)

Check for posters on energy conservation measures displayed in the facility which have been approved by MoHFW/MoEFCC/MeitY.

Scoring:

Sl No.	Type of Facility	IEC	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (At least one relevant IEC material on energy conservation displayed within facility)	2
2.		Not Complied (No relevant IEC material on energy conservation displayed within facility)	0

A 3.2 Establishment of committee for implementation of energy conservation measures.

The infection prevention and control committee shall be responsible for energy conservation programme implementation. A nodal person shall be identified for energy conservation and define the roles and responsibilities of identified nodal person.

Assessment Method: Record Review (RR).
Check the record of committee orders and frequency of meeting conducted under said committee. If a committee establishment order is not available, zero score shall be assigned to facility.

Scoring:

Sl No.	Type of Facility	Energy Conservation Committee	Score
1.	SC, PHC, CHC, SDH and DH	Committee was established and meeting conducted annually	2
2.		Committee was established but meeting not conducted within last one year	1
3.		Committee not established	0

A 3.3 Training programme for healthcare staff on energy and water conservation, waste management and development of GCR health facility in one year.

Assessment Method: Record Review (RR).

Review the district level training records of staff being trained under NPCCHH programme.
or
Enquire from facility incharge about the total medical staff trained on Energy and Water Conservation, Waste Management and development of smart, green and climate resilient facility.

Record the number of staff trained out of total staff in the facility to be trained as per NPCCHH programme guidelines, in last one year.

Scoring:

Sl No.	Type of Facility	Training	Score
1.	SC	Fully Complied (>75% of staff trained)	2
2.		Partially Complied (40-75% of staff trained)	1
3.		Not Complied (<40% of staff trained)	0
4.	PHC, CHC, SDH and DH	Fully Complied (>90% of staff trained)	2
5.		Partially Complied (50-90% of staff trained)	1
6.		Not Complied (<50% of staff trained)	0

B. Water Management

B1. Water Quality

B 1.1 Optimal utilization of available water in the facility.

As per BIS 1172:1993 code for basic requirement for water supply, drainage and sanitation (fourth revision) (Reaffirmed 2022) for hospitals having 100+ beds is 450 litre per bed/day and for hospitals having beds <100, water requirement will be 340 litre per bed/day.

Assessment method: Record Review (RR) / Observation (OB)

(Record Review) Check the recent water bill for water consumption (in kilo litre) and calculate the per day consumption of water in the facility by dividing the total consumption mentioned in the bill by duration of bill cycle (in days) and further divide by number of beds in the facility to get consumption of water per bed per day.

(Observation) If water bills are not available enquire from facility in charge about the total capacity of water storage tanks in facility and frequency of filling of those tanks in a day. Then divide the total consumed water with available beds to get consumption of water per bed per day.

Scoring:

Sl No.	Type of Facility	Water availability (litre/bed/day)	Score
1.	SC or PHC or larger facilities (Number of beds are less than 100)	≤340	2
2.		400≥Water>340	1
3.		>400	0
4.	CHC or larger facilities (Number of beds exceeding 100)	≤450	2
5.		540≥Water>450	1
6.		>540	0

B 1.2 Testing of water samples.

All the facilities must ensure the safe drinking water and sanitation for patients and staff. The facility should test the water samples for bacteriological contamination, residual chlorine, and gross impurities. Water testing should be done at facility level bi-annually as per Ministry of housing and urban affairs.

Assessment method: Record Review (RR)

Check for the latest water sample testing reports of the facility. The recommended period of water sample testing is once in six months as per MoHUA.

Scoring:

Sl No.	Type of Facility	Water testing	Score
1.	SC, PHC, CHC, SDH and DH	Water quality tested using H_2S strips semi-annually	2
2.		Water quality tested using H_2S strips annually	1
3.		No testing done or test report older than 1 year	0

(If the H2S test done within 6 months is satisfactory, then skip question B 1.3)

B 1.3 Treatment of water before consumption.

Health facilities should comply with drinking water quality standards[10] as per BIS Standard, BIS 10500:2012. Common water treatment methods are reverse osmosis (RO), activated carbon filters and pressure filters.

Assessment method: Observation (OB)/Record Review (RR)
Check if a water treatment/disinfection unit is available within the facility.
Or Check the logbook for records of daily usage of water treatment plant in the facility.

Scoring:

Sl No.	Type of Facility	Water treatment plant	Score
1.	SC, PHC, CHC, SDH and DH	Water treatment plant installed and functional	2
2.		Water treatment plant installed but not functional	1
3.		Water treatment plant not installed	0

B 1.4 Cleaning of water storage tanks.

All the facilities have water storage tank(s) depending upon the usage and demand. Irrespective of source of water (municipal or borewell), the water required for daily consumption is being stored in rooftop storage tanks. These storage tanks need to be cleaned semi-annually to avoid settling of impurities and bacterial growth.

Assessment method: Observation (OB) and Record review (RR)

Check for water tank cleaning logbook for frequency of tank cleaning and check the water storage tanks of the facility for any visible impurities such as silt or any algal growth. If visible impurities are found in the tanks, zero (0) score shall be assigned to the facility, irrespective of log-book entry.

[10] BIS Standard, BIS 10500:2012

Scoring:

Sl No.	Type of Facility	Water tank cleaning	Score
1.	SC, PHC, CHC, SDH and DH	No visible impurities seen in tanks and water tank cleaned in last 6 months	2
2.		No visible impurities observed in the tanks but water tank cleaned >6 months back	1
3.		Visible impurities found in tanks	0

B2. Water Conservation

B 2.1 Status of water audit.

Water audit is performed to quantify water use in a facility through detailed examination. A water audit also determines the unaccounted water use. Unaccounted water use includes losses through leaks and unauthorized water consumption.

Assessment method: Record Review (RR).
Check the water audit report and date of last audit being conducted in the facility.

Scoring:

Sl No.	Type of Facility	Water Audit	Score
1.	SC	NA	NA
2.	PHC, CHC, SDH and DH	Water audit done in last 1 year	2
3.		Water audit done within last 3 years	1
4.		No water audit done till date or older than 3 years	0

B 2.2 Installation of Rainwater Harvesting (RWH) system.

Rainwater Harvesting (RWH) is a process of collecting, conveying, and storing rain water in an area either for groundwater recharge or utilization within facility. During rainfall, runoff from precipitation shall be collected in a tank either for recharging aquifers or for internal consumption. A rainwater harvesting system consists of a gutter pipe channel, storage tank or sump well.

Assessment method: Observation (OB).
Check if rainwater harvesting system is installed in the facility.

Scoring:

Sl No.	Type of Facility	Rain Water Harvesting	Score
1.	SC, PHC, CHC, SDH and DH	RWH system installed in the facility	2
2.		No RWH system installed in the facility	0

B 2.3 Installation of water efficient faucets.

Water efficient faucets installed in the healthcare facility help to reduce the water consumption. These faucets are fitted with aerators to reduce the per minute water flow rate, which force water through a screen with small holes in it. This creates a stream of water that is fine and intense and ultimately reduces water wastage. BIS has formulated Indian standards for water efficient plumbing products sanitary ware[11] and sanitary fittings[12] to ensure the optimum usage of water. Faucets are commonly used in Laboratories, bathrooms, kitchens, toilets, cleaning areas and other areas.

(Refer to IS 17650 (Part I and Part II): 2021 Water Efficient Plumbing Products Requirements.)

Assessment method: Observation (OB).
Check if water efficient faucets have been installed in the facility and record the number of water efficient faucets installed against the total number of faucets installed in bathrooms, washrooms, kitchens, washing/laundry area etc.

Scoring:

Sl No.	Type of Facility	Water Efficient Faucets Installation	Score
1.	SC	More than 75% of faucets are water efficient	2
2.		40-75% of faucets are water efficient	1
3.		<40% of faucets are water efficient	0
4.	PHC, CHC, SDH and DH	More than 90% of faucets are water efficient	2
5.		50-90% faucets are water efficient	1
6.		<50% faucets are water efficient	0

B 2.4 Installation of water efficient sanitary fittings.

Water efficient sanitary fixtures installed in the healthcare facility help to reduce the water consumption. These sanitary fittings are designed either with streamlined gravity-flow design to reduce clogging, or with pressure-assist technology to produce a jet-like, clog-free flush. The sanitary fittings are installed with dual flush tanks to reduce the water consumption. BIS has formulated Indian standards for water efficient plumbing products sanitary ware[13] and sanitary

[11] IS 17650 (Part 1): 2021 Water Efficient Plumbing Products Requirements Part 1 - Sanitary ware
[12] IS 17650 (Part 2): 2021: Water Efficient Plumbing Products-Requirements Part 2 - Sanitary Fittings
[13] IS 17650 (Part 1): 2021 Water Efficient Plumbing Products Requirements Part 1 - Sanitary ware

fittings[14] to ensure the optimum usage of water. Dual buttons flush tanks are provided for flushing, for use as per requirement, e.g., partial flush and full flush, which will save about 40% of flushing water.

Assessment method: Observation (OB).
Check if water efficient sanitary fittings (with dual arrangement flush tanks) have been installed in the facility and record the number of such water efficient sanitary fittings against the total number of sanitary fittings installed in bathrooms, washrooms, washing/laundry area etc.

Scoring:

Sl No.	Type of Facility	Water efficient Sanitary fittings Installation	Score
1.	SC	More than 75% of flush tanks have dual arrangement	2
2.		40-70% of flush tanks have dual arrangement	1
3.		<40% of flush tanks have dual arrangement	0
4.	PHC, CHC, SDH and DH	More than 90% of flush tanks have dual arrangement	2
5.		50-90% of flush tanks have dual arrangement	1
6.		<50% of flush tanks have dual arrangement	0

B 2.5 Monitoring of plumbing fixtures for detection of leaks.

Regular monitoring of the faucets, faulty fittings, broken pipes, hoses, shower heads, and other water delivery fittings should be carried in the facility out as per periodic maintenance plan of the facility.

Assessment method: Record Review (RR) and Observation (OB).
Check plumbing maintenance records of the facility for frequency of maintenance checks of plumbing fixtures. Inspect for leaks in the plumbing fixtures such as faucets/pipes/shower/cistern etc., if any visible.

Scoring:

Sl No.	Type of Facility	Leak Detection in plumbing	Score
1.	SC, PHC, CHC, SDH and DH	Leakage not observed and plumbing maintenance record available	2
2.		Leakage not observed but plumbing maintenance record not available	1
3.		Leakage observed in the facility (irrespective of availability of plumbing maintenance record)	0

B3. Wastewater Treatment

B 3.1 Installation of Effluent Treatment Plant (ETP).

[14] IS 17650 (Part 2): 2021: Water Efficient Plumbing Products-Requirements Part 2 - Sanitary Fittings

The function of ETP is to treat the wastewater generated from the healthcare facility which can be reused for horticultural purposes, cleaning and sanitation activities and ground water recharge. The treated water should comply with the effluent standards prescribed under the EPA, 1986.

Assessment method: Observation (OB).
Check if the effluent treatment plant is installed in the facility. Observe for the flow of wastewater in the tanks of the ETP to confirm its functionality.

Scoring:

Sl No.	Type of Facility	STP/ETP Installation	Score
1.	SC, PHC (non-bedded)	NA	NA
2.	PHC, CHC, SDH and DH (Bedded facility)	ETP installed and functional	2
3.		ETP installed but not functional	1
4.		ETP not installed in the facility	0

B 3.2 Status of compliance to discharge standards for ETP.

The discharge from installed ETP in health facilities should comply with discharge standards of EPA 1986, Schedule VI. This indicator is applicable to all bedded facilities having ETP. If ETP is not installed in the bedded facility, the facility shall get zero score for this indicator.

Assessment method: Record Review (RR).
Check the latest effluent adequacy report of ETP. Effluent needs to be tested semi-annually by government-recognized laboratories. If the effluent test report is unsatisfactory for any of the listed parameters in the report, the discharge would be considered as non-compliant with discharge standards and a maintenance check will need to be advised to the facility.

Scoring:

Sl No.	Type of Facility	STP/ETP Test Report	Score
1.	SC, PHC (non-bedded)	NA	NA
2.	PHC, CHC, SDH and DH (Bedded facility)	Effluent test performed in last six months and report confirming to discharge standards of EPA 1986, Schedule VI	2
3.		Effluent testing report not confirming to discharge standards of EPA 1986, Schedule VI	0

B 3.3 Utilization of treated wastewater.

All the facilities treating wastewater should reuse the treated wastewater either for horticulture, washing and sanitation activities, groundwater recharge etc. This indicator is applicable to all bedded facilities. If ETP is not installed in bedded facilities, facility shall get zero score.

Assessment method: Observation (OB).

Calculate the total water demand the facility based on number of beds installed and compare with the water consumption. The difference between standard water demand for the facility (As per BIS 1172:1993) and actual water consumption shall be considered as water demand to be met by effluent generated from ETP. Amount of treated water recirculated in the facility can be observed by reading dial gauge connected to the ETP.

Or

Enquire from facility incharge about the usage of treated water. If facility is reusing the treated wastewater for washing and sanitation activities, plumbing fixtures can be checked. If facility is using treated wastewater for groundwater recharge, check the water harvesting system.

Scoring:

Sl No.	Type of Facility	Effluent Reuse	Score
1.	SC, PHC (Non-bedded facility)	NA	NA
2.	PHC, CHC, SDH and DH (Bedded facility)	More than 90% of treated effluent is recirculated	2
3.		50-90% of treated effluent is recirculated	1
4.		<50% of treated effluent is recirculated	0

B 3.4 Availability of septic tank/soak pit for disposal of wastewater.

A Septic tank or soak pit is installed in non-bedded facilities for stabilization (decomposition of organic matter) of wastewater generated in the facility. This water discharged from the septic tank will further percolate into the ground. This indicator is applicable to all non-bedded facilities.

Assessment method: Observation (OB).

Observe whether a septic tank/soak pit is installed within the facility (either single or double tank system).

Scoring:

Sl No.	Type of Facility	STP/ETP	Score

1.	SC, PHC (non-bedded)	Septic tank/soak pit installed for wastewater treatment	2
2.		No septic tank/soak pit installed	0
3.	PHC, CHC, SDH and DH (Bedded)	NA	NA

B4. Knowledge and Capacity Building

B 4.1 Establishment of committee for implementation of water conservation measures.

The Infection prevention and control committee shall be responsible for implementation of Water Conservation measures. A nodal person shall be identified for water conservation for the facility.

Assessment method: Record Review (RR).
Check the record of committee orders and frequency of meeting conducted under said committee.

Scoring:

Sl No.	Type of Facility	Committee	Scoring
1.	SC, PHC, CHC, SDH and DH	Committee was established and meeting conducted annually	2
2.		Committee established but meeting not conducted within last one year	1
3.		Committee not established	0

B 4.2 Display of IEC material on water conservation measures.

All the facilities shall display relevant IEC on water conservation measures at prominent locations such as water coolers, washrooms, kitchen etc.

Assessment method: Observation (OB).

Check for displayed IEC on water conservation measures at prominent locations of the facility approved by MoHFW/MoEFCC/MoJS.

Scoring:

Sl No.	Type of Facility	IEC availability	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (At least one relevant IEC material on water conservation displayed within facility)	2
2.		Not Complied (No relevant IEC material on water conservation displayed within facility)	0

C. Waste Management

C1 Waste Minimization

C1.1 Status of conducting waste audit.

Waste audit is conducted to reduce the waste in the facility and identify the areas from where the maximum waste is generated. This approach is intended to identify the major waste contributors and to provide a starting point for waste diversion initiatives. The infection prevention and control committee is responsible to conduct the waste audit semi-annually.

Assessment method: Record Review (RR).

Check the waste audit reports and frequency of conducting waste audit for the facility.

Scoring:

Sl No.	Type of Facility	Waste Audit	Score
1.	SC, PHC, CHC, SDH and DH	Waste audit done in last 6 months	2
2.		Waste audit done between 6months to 1 year	1
3.		Waste audit never conducted or not conducted in last 1 year	0

C 1.2 Segregation of Biomedical Waste (BMW).

All health facilities must follow Bio-medical Waste Management Amendment Rules, 2018, for segregation, collection, transportation, and disposal of the waste.

Assessment method: Observation (OB).

Check for availability of the four colored bins placed at facility for the segregation of waste at the prominent locations such as dressing room, IPD, OT, Laboratory, Labour room, ICU, immunization room.

Scoring:

Sl No.	Type of Facility	Segregation of BMW	Score
1.	SC, PHC, CHC, SDH and DH	More than 90% of the identified rooms have separate bins for 4 categories of BMW	2
2.		50-90% of the identified rooms have separate bins for 4 categories of BMW	1
3.		Less than 50% of the identified rooms have separate bins for 4 categories of BMW	0

C 1.3 Segregation of Recyclable and Biodegradable Wastes.

All health facilities must follow the Municipal Solid Waste Management Rules, 2016, for segregation, collection, transportation, and disposal of the recyclable and biodegradable waste.

Assessment method: Observation (OB).

Check if separate blue and green bins for recyclable and biodegradable waste, are in the facility for the segregation of waste at the prominent locations such as OPDs, Patient Waiting Area, Pharmacy, Office, Cafeteria etc.

Scoring:

Sl No.	Type of Facility	Segregation of Recyclable and Biodegradable Wastes	Score
4.	SC, PHC, CHC, SDH and DH	More than 90% of the identified rooms have separate bins for recyclable and biodegradable waste	2
5.		50-90% of the identified rooms have separate bins for recyclable and biodegradable waste	1
6.		Less than 50% of the identified rooms have separate bins for recyclable and biodegradable waste	0

C2. Waste Handling and Treatment

C 2.1 BMW collection from health facility.

A facility must follow Bio-medical Waste Management Amendment Rules, 2018, along with Bio-medical Waste (Management) Rules, 2016 for segregation, collection, transportation, and disposal of the waste separately. Collection shall be performed using PPE kits as per BMW Rules, 2016.

Assessment method: Observation (OB).
Observe if facility has a waste collection room and a log book of daily waste generated in the facility.

Scoring:

Sl No.	Type of Facility	BMW Management	Score
1.	SC, PHC, CHC, SDH and DH	Separate room for waste storage available and logbook maintained	2
2.		Separate room for waste storage available but logbook not maintained	1
3.		No separate room available for waste collection	0

C 2.2 Collection of biomedical waste by a Common Bio-Medical Waste Treatment Facility (CBMWTF).

(This question is applicable if a CBMWTF is located within 75km radius of the health facility)

As per BMW Rules, 2016, all the public healthcare facilities within 75 kilometres of CBWTF needs to dispose off the BMW through CBWTF only and are not allowed to establish its own treatment and disposal facility. For the health care facilities, especially in rural areas where there is no CBWTF within the range of 75 kilometres, the disposal of BMW can still be made through a CBWTF who is willing to provide treatment services and is authorized by the concerned State pollution control board (SPCB)/Pollution control committee (PCC) to operate in an area beyond 75 Km radial distance.

Assessment method: Record Review (RR)

Check for record of waste collection conducted by CBMWTF, as per BMW Rules, 2016.

Scoring:

Sl No.	Type of Facility	Waste Collection by CBMWTF	Score
1.	SC, PHC, CHC, SDH and DH	Waste collection done by CBMWTF	2
2.		Waste collection not done by CBMWTF	0

C 2.3 Disposal of waste by burial pit method.

(This question is applicable if CBMWTF is located beyond 75km radius of health facility)

Burial pits are used for disposal of human and animal anatomical waste. The burial pits/shallow pits must be used only for yellow category of waste as specified in BMW Rules, 2016. For the health care facilities especially in rural areas where there is no CBMWTF within range of 75 kilometres, the disposal of BMW can still be made through a CBMWTF which is willing to provide treatment services and is authorized by the concerned SPCB/PCC to operate in an area beyond 75 Km radial distance. In case of no available CBMWTF, the BMW generated from HCFs should be disposed by incineration or by deep burial pit method as authorized by the respective SPCB/PCC. Facility may follow only one method of disposal out of question no. C 2.2 and C 2.3.

Assessment Method: Observation (OB) and Review Record (RR).

Observe if burial pit is available within facility and check the waste disposal logbook.

Scoring:

Sl No.	Type of Facility	Burial Pit/Shallow pit Availability	Score
1.	SC, PHC, CHC, SDH and DH	Burial pits/shallow pit present and waste disposal record maintained	2
2.		Burial pit/shallow pit present but waste disposal records not maintained	1
3.		No burial pits/shallow pit available	0

C 2.4 Disposal of waste in sharp pits.

(This question is applicable if CBMWTF is located beyond 75km radius of health facility)

Sharp pits are used for sharps and infectious waste as specified in BMW Rules, 2016. For the health care facilities especially in rural areas where there is no CBWTF within range of 75 kilometres, the disposal of BMW can still be made through a CBMWTF who is willing to provide treatment services and authorized by the concerned SPCB/PCC to operate in an area beyond 75 km radial distance. In case of no reach to any CBMWTF, the BMW generated from HCFs should be disposed in captive treatment and disposal facility or by deep burial pit as authorized by the respective SPCB/PCC and as specified in these guidelines. Facility may follow only one method of disposal out of question no. C 2.2 and C 2.4.

Assessment Method: Observation (OB) and Review Record (RR).

Observe if sharp pit installed within facility for waste disposal and check the waste disposal logbook.

Scoring:

Sl No.	Type of Facility	Sharp Pit Availability	Score
1.	SC, PHC, CHC, SDH and DH	Sharp pit present and waste disposal record maintained	2
2.		Sharp pit present but waste disposal records not maintained	1
3.		No sharp pit available	0

C 2.5 Treatment of sharp waste.

All the waste disposed in the sharp pit are required to be autoclaved and shredded before disposal, to minimize the infection as well as the volume of the waste.

Assessment Method: Review Record (RR).

Check the logbook for the autoclave and shredding of waste.

Scoring:

Sl No.	Type of Facility	Sharp Waste Treatment	Score
1.	SC, PHC, CHC, SDH and DH	Waste autoclaved and shredded before disposal	2
2.		Waste either only autoclaved or only shredded before disposal	1
3.		Waste neither autoclaved nor shredded before disposal	0

C 2.6 Availability of compost pit for Wet waste.

All the waste generated in health care facilities are not hazardous or toxic in nature. Waste generated from kitchen are categorized as wet waste. The wet waste is compostable either aerobically or anaerobically. Open compost pits are preferred for wet waste.

Assessment Method: Observation (OB).
Observe if compost pits are available in the facility for wet waste management.

Scoring:

Sl No.	Type of Facility	Wet Waste Treatment	Score
1.	PHC, CHC, SDH and DH	Compost pit maintained for management of wet waste	2
2.		No compost pit available	0

C 2.7 Availability of compost plant for dry waste.

All the waste generated in health care facilities are not hazardous or toxic in nature. Waste generated from garden (plants, tree trimmings) are categorized as dry waste. The dry waste is compostable either aerobically or anaerobically.

Assessment Method: Observation (OB).
Observe if compost pits installed in the facility for management of dry waste.

Scoring:

Sl No.	Type of Facility	Dry Waste Treatment	Score
1.	SC, PHC, CHC, SDH and DH	Compost pit available for management of dry waste	2
2.		No compost pit available	0

C 2.8 Collection of solid waste by municipal/local authority.

Waste, which is not hazardous or toxic or not biodegradable, is dumped by municipal authorities. The local municipal body collects solid waste from all the facilities on daily basis. Dumping of waste in open area or burning of waste is not recommended and considered a punishable offence under the Solid Waste Management Rules, 2016.

Assessment Method: Record Review (RR).
Check the annual or monthly record of bills or charges paid by facility to concerned authority for collection of solid waste.

Scoring:

Sl No.	Type of Facility	Solid Waste Treatment	Score
1.	SC, PHC, CHC, SDH and DH	Solid Waste collected by Municipal/local authority on daily basis	2
2.		Solid waste dumped in open area/burnt	0

C3. Knowledge and Capacity Building

C 3.1 Establishment of committee for implementation of waste management measures.

Waste management committee is responsible for implementation of measures for reduction of waste generation, reuse of waste, monitoring of waste management measures etc. The infection prevention and control committee are responsible to develop the waste management committee for planning, monitoring, and budgeting of activities.

Assessment Method: Record Review (RR).

Review the committee establishment order and frequency of meetings being conducted by committee.

Scoring:

Sl No.	Type of Facility	Waste Management Committee	Score
1.	SC, PHC, CHC, SDH and DH	Committee established and meeting conducted annually	2
2.		Committee established and meeting not conducted within last 1 year	1
3.		Committee not established	0

C 3.2 Display of IEC material on waste minimization and segregation.

All the facilities shall display relevant IEC on waste minimization and segregation at prominent locations approved by MoHFW/MoEFCC.

Assessment Method: Observation (OB).

Observe whether facility has displayed relevant IEC on waste minimization and segregation at prominent locations such as kitchen, administrative blocks, store room etc.

Scoring:

Sl No.	Type of Facility	IEC availability	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (At least one relevant IEC material on waste minimization and segregation displayed within facility)	2
2.		Not Complied (no relevant IEC material on waste minimization and segregation displayed within facility)	0

D. Smart and Green Building

D1. Smart Services

D 1.1 Disabled friendly access for patients and staff.

All the facilities should have disabled friendly access within the premises. For easy access of non-ambulant (wheelchair, stretcher), semi-ambulant, visually disabled, and elderly people, infrastructural norms in line with the 'Guidelines and Space Standards for barrier-free built environment for Disabled and Elderly Persons' of the Government of India, should be followed.

Assessment method: Observation (OB)

Check for ramps at entry/exit gates and within the building to access higher floors, and handrails at entry/exit gates, staircases, and toilets.

Scoring:

Sl No.	Type of Facility	Disabled friendly access	Score
1	SC, PHC, CHC, SDH and DH	Facility has ramps/lifts for disabled friendly access	2
2		Disabled friendly access not adequately available as per IPHS norms	0

D 1.2 Availability of disabled-friendly toilets.

Disabled friendly toilets with features such as proper signages, railings and adequate door width and space for wheelchair movement should be made available at all facilities.

Assessment method: Observation (OB)

Check if disabled friendly toilets are available in the facility.

Scoring:

Sl No.	Type of Facility	Disabled friendly toilets	Score
1	SC	Disabled friendly toilet/amenities available in the facility	2
2		Disabled friendly toilet is not available in the facility	0
3	PHC, CHC, SDH and DH	Disabled-friendly toilet is separately available in the facility	2
5		Disabled-friendly toilet not separately available in the facility	0

D 1.3 Availability of parking space for ambulances and other vehicles.

Parking space for ambulances, staff and visitors' vehicles should be adequate to accommodate the facility's load. Wherever possible, separate parking spaces should be allotted for staff and visitor parking. Fringe parking can be created if such space is available.

Assessment method: Observation (OB).

Facility should have dedicated parking for ambulances and patients and staff vehicles within the premises.

Scoring:

Sl No.	Type of Facility	Parking Space	Score
1	PHC, CHC, SDH and DH	Facility has parking space for ambulances and staff/visitor	2
2		Facility has parking space available for ambulance only	1
3		Parking space not available in the facility	0

D 1.4 Availability of electronic data recording system.

A proper system of collection, sorting, filing, indexing and storage of documents along with quick retrieval should be designed for efficient record keeping management. This is also a mandatory requirement, considering the Right to Information Act 2005. Digitization of records, wherever possible should be done while adhering to data security guidelines of Government of India.

Assessment method: Record Review (RR).

Check if electronic data recording such as HIMS/LIMS is maintained at the facility to record patient, staff and operational services.

Scoring:

Sl No.	Type of Facility	Electronic Data Recording System	Score
1	PHC, CHC, SDH and DH	Facility has an electronic data recording system to maintain staff & patient data and to manage laboratory operations.	2
2		Facility has an electronic data recording system to maintain staff & patient data or to manage laboratory operations.	1
3		Facility does not maintain any electronic data recording system.	0

D2. Safety Measures

D 2.1 Availability of fire exit on each floor of the facility.

Fire exits should be present on each floor of the building and it is an essential criterion for all types of facilities. The facility should ensure fire safety measures as per IPHS such as illumination, emergency lighting, firefighting equipment, disaster and emergency preparedness and power backup.

Assessment method: Observation (OB).

Check for fire exit availability on each floor of the facility.

Scoring:

Sl No.	Type of Facility	Fire exits available on each floor	Score

1	SC, PHC, CHC, SDH and DH	Fire exit is available on each floor of the facility	2
2		Fire exit is available on some floors of the facility	1
3		No separate fire exit is available in the facility	0

D 2.2 Availability of illuminated fire exit signages.

All the fire exits should be illuminated. A power backup should be present for the emergency lighting.

Assessment method: Observation (OB)

Check for availability of illuminated fire exit signages in the facility.

Scoring:

Sl No.	Type of Facility	Fire Exit Signages	Score
1	SC, PHC, CHC, SDH and DH	Fire exit signages are available on each floor of the facility	2
2		Fire exit signages are available on some floors of the facility	1
3		No exit signages are available in the facility	0

D 2.3 Availability of firefighting equipment on each floor.

Firefighting equipment would include sand buckets, fire extinguishers, hose pipe and water sprinkler system which are to installed in locations such as hallways, patient waiting area, wards, operation theatres, laboratories, cold chain room.

Assessment method: Observation (OB)

Check for availability of firefighting equipment on each floor of facility.

Scoring:

Sl No.	Type of Facility	Firefighting equipment available on each floor	Score
1	SC, PHC, CHC, SDH and DH	Firefighting equipment available on each floor	2
2		Firefighting equipment available on some floors	1
3		Firefighting equipment not available anywhere in the facility	0

D 2.4 Display of evacuation plan in the facility.

An evacuation plan should be displayed on each floor, and the hospital staff is to be trained on fire safety and evacuation measures as per NDMA guidelines. Fire exit evacuation layout should be in bilingual language at 30m from a visible exit directional sign.

Assessment Method: Observation (OB)

Check if evacuation plan is displayed on every floor of facility.

Scoring:

Sl No.	Type of Facility	Fire Evacuation plan	Score
1	SC, PHC, CHC, SDH and DH	Fire evacuation plan displayed on each floor of the facility	2
2		Fire evacuation plan displayed on some floors of the facility	1
3		Fire evacuation plan not displayed anywhere in the facility	0

D 2.5 Installation of fire alarm system in the facility.

Smoke detectors and automated/manual fire alarms should be installed at prominent locations of all facilities.

Assessment Method: Observation (OB)

Check for the fire alarm system installation on every floor of the facility.

Scoring:

Sl No.	Type of Facility	Fire Alarm	Score
1	SC, PHC, CHC, SDH and DH	Fire alarm system installed on each floor of facility	2
2		Fire alarm system installed on some floors of facility	1
3		Fire alarm system not installed in the facility	0

D 2.6 Fire Safety Audit

Assessment Method: Record Review (RR)

Check for the most recent fire safety audit report of the health facility

Scoring:

Sl No.	Type of Facility	Fire Safety audit	Score
1	PHC, CHC, SDH and DH	Facility has conducted fire safety audit in last one year	2
2		Facility has conducted fire safety audit within last 2-5 years	1
3		Facility has never conducted fire safety audit within last 5 years	0

D 2.7 NOC from fire safety department

Assessment Method: Record Review (RR)

Check for the latest NOC issued by the fire safety department to the health facility to ensure that the health facility meets the fire and safety regulations.

Scoring:

Sl No.	Type of Facility	NOC from Fire Safety department	Score
1	PHC, CHC, SDH and DH	Facility has received NOC from fire safety department	2
2		Facility has not received NOC from fire safety department	0

D 2.8 NOC from electrical inspectorate/electricity board of state government.

Assessment Method: Record Review (RR)

Check for the latest NOC issued by the electrical inspectorate/electricity board of state government to the health facility to ensure that commissioned electrical installations meet safety standards and regulations.

Scoring:

Sl No.	Type of Facility	NOC from Electricity board	Score
1	PHC, CHC, SDH and DH	NOC issued by electrical inspectorate/electricity board of state government	2
2		NOC not issued by electrical inspectorate/electricity board of state government	0

D3. Green Measures

D 3.1 Availability of natural ventilation.

The facility infrastructure should ensure a good amount of natural ventilation using windows of adequate size and numbers, as per IPHS guidelines.

Assessment method: Observation (OB)

Check for natural ventilation in rooms with openable windows such as OPDs, waiting area, Labour room, administrative block, IPDs etc.

Scoring:

Sl No.	Type of Facility	Natural Ventilation	Score
1	SC, PHC, CHC, SDH and DH	More than 90% of identified rooms have openable windows	2
2		50-90% of identified rooms have openable windows	1
3		Less than 50% of identified rooms have openable windows	0

This question shall be applicable if HVAC is not available in facilities such as CHC, SDH and DH.

D 3.2 Adoption of insulation measures in the facility.

Insulated black panels should be used in some of the glazed space's area like the waiting rooms. High-performance glass has high insulation properties, blocks heat loss, and reduces the cooling requirement for the facility.

Assessment method: Observation (OB)
Check the type of glass panels on windows and doors installed in the facility.

Scoring:

Sl No.	Type of Facility	Glazing glass	Score
1	CHC, SDH and DH	More than 90% of windows and doors are insulated	2
2		50-90% of windows and doors are insulated	1
3		Less than 50% of windows and doors are insulated	0

D 3.3 Adoption of Green procurement policy by the facility.

Environmentally Friendly Purchasing (EFP) refers to the purchase of the least damaging products and services, in terms of environmental impact. Hence, it provides a healthier environment for patients and staff. The most easily recyclable plastics, such as polyethylene, polypropylene, and polyethylene terephthalate (PET) shall be preferred over polyvinyl chloride (PVC) which is difficult to recycle. Procure latex or nitrile gloves instead of PVC gloves, Latex or silicone tubing can replace PVC tubing. Ethylene vinyl acetate bags can replace PVC bags for saline and blood. (Applicable if state has mandated green procurement policy).

Assessment method: Record review (RR) / observation (OB)
Check for the availability of any state policy on green procurement. If issued by the state, check procurement records to assess adherence to the policy. If no such policy exists in the state, facility will be scored as fully compliant.

Scoring:

Sl No.	Type of Facility	Green Procurement Policy	Score
1	PHC, CHC, SDH and DH	Facility follows a green procurement policy as mandated by state	2
2		Facility does not follow a green procurement policy mandated by state	0

D 3.4 Availability of outdoor gardens for stress relieving.

Healthcare facilities and employees often turn to nature to help them de-stress while in the middle of a shift. Facilities should create small outdoor gardens where staff can step out and get away from the chaos of the healthcare facility for a few minutes.

Assessment method: Observation (OB)
Observe if gardens are maintained for stress relieving activities such as Yoga.

Scoring:

Sl No.	Type of Facility	Outdoor Garden	Score
1	PHC, CHC, SDH and DH	Facility has maintained outdoor garden	2
2		Facility has not maintained outdoor garden	0

D 3.5 Availability of herbal and kitchen garden.

Health facilities should establish herbal gardens with medicinal and aromatic plants which commonly found species/varieties in those areas. The ideal location of the kitchen garden would be on the rooftop or in the backyard of the facility. IPHS recommend development of herbal

Assessment method: Observation (OB)

Observe if herbal and kitchen garden is maintained by the facility.

Scoring:

Sl No.	Type of Facility	Herbal and Kitchen Garden	Score
1	PHC, CHC, SDH and DH	Facility has maintained both herbal and kitchen garden	2
2		Facility has maintained either herbal or kitchen garden	1
3		Facility has not maintained both herbal and kitchen garden	0

E. Climate Resilient Elements

E1. Structural Elements

E 1.1 Structural Audit

Assessment method: Record review (RR)

Check for the most recent structural audit report for the health facility.

Scoring:

Sl No.	Type of Facility	Structural Audit	Score
1	PHC, CHC, SDH and DH	Facility has conducted structural audit in last five year	2
2		Facility has not conducted structural audit in last five years	0

E 1.2 Implementation of retrofitting measures to avoid damage due to extreme weather events.

The extreme weather events require retrofitting measures are floods, cyclones, heat etc. Check for approved building layout plan after implementation of retrofitting measures to protect building from floods and cyclone are construction of retaining wall, benching of slopes, stabilization of slopes, rock anchors, wire mesh etc. The retrofitting measures for heat adaptation are painting of roof with white colour paint, development of roof garden, design of sunshades over windows and doors to maintain inside temperature, etc. The retrofitting measures against F cold wave are HVAC, insulation of doors and windows and water heaters for heat preservation.

Assessment method: Record review (RR) and Observation (OB)

Observe the implemented measures in the facility, if any. If the facility is not located in a disaster-prone area, then the facility shall be considered as compliant.

Scoring:

Sl No.	Type of Facility	Retrofitting measures	Score
1	PHC, CHC, SDH and DH	Retrofitting measures implemented to minimize impact of extreme weather events	2
2		Retrofitting measures not implemented to minimize impact of extreme weather events	0

E 1.3 Implementation of flood resilient measures.

Assessment method: Observation (OB)

Observe the height of the plinth level of the building, it should be at least 2 ft above the ground level.

Scoring:

Sl No.	Type of Facility	Plinth level of facility	Score
1	SC, PHC, CHC, SDH and DH	Plinth level of facility is at least 2 ft above ground level	2
2		Plinth level of facility is less than 2 ft from ground level	0

E2. Non-Structural Elements

E 2.1 Availability of buffer stock of essential supplies during and after extreme weather events.

The buffer stock of essential supplies (through supply chain record) required during the heat wave period includes an adequate supply of essential medicines, intravenous fluids, ice packs, ORS, sufficient drinking water, and constant electricity to maintain the continued functioning of cooling appliances.

Assessment method: Record review (RR)

Check the buffer stock availability with reference to the stock and indent record for the concerned months. Buffer stock should be maintained as per IPHS norms (at least 30 days).

Scoring:

Sl No.	Type of Facility	Buffer Stock maintenance	Score
1	SC, PHC, CHC, SDH and DH	Buffer stock of essential items is maintained for at least 30 days	2
2		Buffer stock of some of the essential items is maintained	1
3		Buffer stock of essential items is not maintained	0

E 2.2 Maintenance of drains or stormwater outlets in the facility.

Drain Channel should be covered with a perforated lid, to avoid stagnation of silt and garbage. Drains must be cleaned regularly to avoid water stagnation.

Assessment method: Observation (OB)

Observe the drainage channels maintained in facility for any blockages.

Scoring:

Sl No.	Type of Facility	Maintenance of drains	Score
1	PHC, CHC, SDH and DH	All drains or stormwater outlet points are clean	2
2		Drains/ stormwater outlets points are clogged	0

E 2.3 Placement of critical equipment in the facility.

Critical emergency medical equipment[15],[16] should be placed at higher floors to prevent damage during emergencies such as floods.

Assessment method: Observation (OB)

Observe the placement of critical equipment in the facility, whether placed on a higher floor or if there are provisions to shift the equipment to higher floors during emergencies such as floods.

Scoring:

Sl No.	Type of Facility	Critical Equipment	Score
1	PHC, CHC, SDH and DH	All critical equipment maintained at higher floors or provision available to shift at higher floors	2
2		Some of the critical equipment maintained at higher floor	1
3		Critical equipment not maintained at higher floor or there is no provision to shift to a higher floor	0

[15] WHO Generic Essential Emergency Equipment List

[16] Guideline on Critical Care Hospital Blocks_PM-ABHIM.pdf (mohfw.gov.in)

E 2.4 Heat preparedness measures in the facility for rapid cooling

Assessment method: Observation (OB)
Check for availability of functional air conditioners/Coolers/Other cooling appliances in heat stroke room/makeshift ward for management of heat related illnesses in the facility.

Scoring:

Sl No.	Type of Facility	Heat preparedness measures	Score
1	PHC, CHC, SDH and DH	The facility has provision of functional ACs/Coolers/Other cooling appliances in heat stroke room/makeshift ward	2
2		The facility has provision of ACs/Coolers/Other cooling appliances in heat stroke room/makeshift ward but not functional	1
3		No cooling appliance available in heat stroke room/makeshift ward to manage heat related illness	0

E 2.5 Availability of heat stroke beds or makeshift wards for management of heat related illnesses.

There should be provision for establishing heat stroke beds in all heat vulnerable states or districts.

Assessment method: Observation (OB)
Check for the availability of heat stroke beds/makeshift ward in the facility.

Scoring:

Sl No.	Type of Facility	Heat stroke beds/Makeshift ward	Score
1	PHC, CHC, SDH and DH	The facility has provision for heat stroke beds/makeshift ward	2
2		No provision for heat stroke beds/makeshift ward	0

E 2.6 Availability of continuous water source/storage to meet the hospital requirements during extreme weather events.

Assessment method: Observation (OB)
Observe if the water source is regular, or intermittent or if extra storage is available to meet the demand during emergencies such as water shortage due to floods, droughts etc.

Scoring:

Sl No.	Type of Facility	Water Supply	Score

1	PHC, CHC, SDH and DH	Continuous water source is available, or extra storage provided in the facility for emergency use for at least 3 days	2
2		Continuous water source is not available or extra storage not maintained in the facility for emergency use	0

E 2.7 Availability of power back up to meet the energy demand during extreme weather events.

Assessment method: Observation (OB)
Check the alternate power source (generators/battery backup/solar) for emergencies.

Note: If the facility has installed a Diesel Generator as power backup for emergencies, it shall comply with Environmental (Protection) Amendment (Third Amendment) Rules, 2013.

Scoring:

Sl No.	Type of Facility	Alternate Energy	Score
1	PHC, CHC, SDH and DH	An alternate green energy source (Solar powered Battery Backup) is maintained for emergency	2
2		An alternate energy source (Diesel Generator compliant with EPA norms/Battery Backup) is maintained for emergency	1
3		No alternate power source is maintained	0

E3. Training and Capacity Building

E 3.1 Establishment of functional committee for disaster preparedness.

Healthcare facilities should have a functional committee for disaster preparedness and should meet periodically to implement measures for development of green and climate resilient facilities.

Assessment Method: Record review (RR)
Means of Verification: Check the committee establishment orders and meeting minutes.

Scoring:

Sl No.	Type of Facility	Committee for disaster preparedness	Score
1	PHC, CHC, SDH and DH	Committee established and conducted meetings in last one year	2
2		Committee established but meeting not conducted in last one year	1
3		Committee not established	0

E 3.2 Availability of disaster preparedness plan for the facility that includes climate induced disasters.

Assessment method: Record review (RR)

Check if the health facility has a disaster preparedness plan covering common climate-induced disaster such as floods, cyclones, fires.

Scoring:

Sl No.	Type of Facility	Disaster preparedness plan	Score
1	PHC, CHC, SDH and DH	Disaster preparedness plan developed and covers the climate-induced disasters	2
2		Disaster preparedness plan developed but climate-induced disasters not covered	1
3		Disaster preparedness plan not developed	0

E 3.3 Availability of Emergency Communication Plan.

Clear communication system is required to coordinate with staff, patients, caretaker, and external agencies during early warning phase, during the disaster and post disasters phases.

Assessment method: Record review (RR)

Check if a disaster communication plan is available for the facility.

Scoring:

Sl No.	Type of Facility	Emergency Communication Plan	Score
1	PHC, CHC, SDH and DH	Emergency communication plan available	2
2		Emergency communication plan not available	0

E 3.4 Availability of emergency plan for evacuation / resettlement / sheltering during disasters.

Assessment method: Record review (RR)

Check for the availability of emergency plan for evacuation / resettlement / sheltering during early warning, disaster, and disaster phases.

Scoring:

Sl No.	Type of Facility	Evacuation Plan	Score
1	PHC, CHC, SDH and DH	Emergency plan developed for all phases of disaster	2
2		Emergency plan not developed for all phases of disaster	0

E 3.5 Training programme for healthcare staff on disaster preparedness in last one year.

Assessment method: Record Review (RR)

Observe the mock drill and training record maintained by the facility on disaster preparedness, if done in the last one year.

Scoring:

Sl No.	Type of Facility	Training	Score
1	PHC, CHC, SDH and DH	More than 90% of healthcare staff trained to respond during disaster	2
2		50-90% of the healthcare staff trained to respond during disaster	1
3		Less than 50% of healthcare staff trained to respond during disaster	0

E 3.6 Display of IEC material on extreme weather events and disaster preparedness.

Assessment method: Observation (OB)
Observe for relevant IEC material displayed within the facility which are approved by NCDC, NDMA/SDMA.

Scoring:

Sl No.	Type of Facility	IEC	Score
1.	SC, PHC, CHC, SDH and DH	Fully Complied (at least one relevant IEC material on EWE displayed within facility)	2
2.		Not Complied (no IEC material on EWE displayed within facility)	0

Annexure B

Impact of implementation of green and climate resilient measures

S.No.	Indicators	Impact	
		Mode of Impact	Magnitude of impact
1	Status of installation of LED lights in the facility	Direct	High
2	Use of eco-friendly cooling appliances in the facility	Direct	High
3	Availability of energy efficient electrical appliances in the facility	Direct	Medium
4	Availability of sufficient natural light in the facility	Indirect	High
5	Availability of Occupancy Sensors (Motion Sensor) lighting in facility	Direct	Low
6	Energy audit conducted in the facility	Indirect	Medium
7	Installation of stabilizers/sub-meter to optimize the energy consumption in the facility	Indirect	Medium
8	Availability of energy efficient Heating, ventilation and air conditioning (HVAC) system	Direct	Medium
9	Availability of functional solar panel system	Direct	High
10	Capacity of the installed solar panels	Direct	High
11	Display of IEC materials on energy conservation measures	Indirect	Low
12	Establishment of committee for implementation of energy conservation measures	Indirect	Low
13	Training programme for healthcare staff on Energy and Water Conservation, Waste Management and development of green and climate resilient health facility	Indirect	High
14	Optimal utilization of water in the facility	Direct	Medium
15	Testing of water samples in the facility	Direct	Medium
16	Treatment of water before consumption	Direct	Medium
17	Cleaning of water storage tanks	Direct	Low
18	Status of water audit	Indirect	Medium
19	Installation of Rain Water Harvesting (RWH) system	Direct	High
20	Installation of water efficient faucets	Direct	Medium

S.No.	Indicators	Impact	
		Mode of Impact	**Magnitude of impact**
21	Installation of water efficient sanitary fittings	Direct	Medium
22	Monitoring of plumbing fixtures for detection of leaks	Direct	Low
23	Installation of Effluent Treatment Plant (ETP)	Direct	High
24	Status of compliance to discharge standards for ETP	Direct	High
25	Utilization of treated wastewater	Direct	Medium
26	Availability of septic tank/soak pit for disposal of wastewater	Direct	High
27	Establishment of committee for implementation of water conservation measures	Indirect	Low
28	Display of IEC material on water conservation measures	Indirect	Low
29	Status of waste audit	Indirect	Medium
30	Segregation of Biomedical Waste	Direct	High
31	Segregation of Recyclable and Biodegradable Wastes	Direct	Medium
32	BMW collection from health facility	Direct	Low
33	Collection of BMW by common bio-medical waste treatment facility (CBMWTF).	Direct	High
34	Disposal of waste by burial pit method	Direct	High
35	Disposal of waste by sharp pit method	Direct	High
36	Treatment of sharp waste	Direct	Medium
37	Availability of compost pit for wet waste	Direct	Medium
38	Availability of compost pit for dry waste	Direct	Medium
39	Collection of solid waste by Municipal/Local authority	Indirect	Medium
40	Establishment of committee for implementation of waste management measures	Indirect	Low
41	Display of IEC material on waste minimisation and segregation	Indirect	Low
42	Disabled friendly access for patients and staff	Direct	High
43	Availability of disabled-friendly toilets	Direct	Medium
44	Availability of electric vehicle fleet for patient transport	Direct	Medium

S.No.	Indicators	Impact	
		Mode of Impact	**Magnitude of impact**
45	Availability of electronic data recording system	Direct	Medium
46	Availability of telemedicine facilities	Direct	low
47	Availability of fire exit on each floor of the facility	Direct	High
48	Availability of Illuminated fire exit signages	Direct	Medium
49	Availability of fire fighting equipment on each floor	Direct	High
50	Display of evacuation plan in the facility	Direct	Medium
51	Installation of fire alarm system in the facility	Direct	High
52	Fire Safety audit conducted	Indirect	Low
53	NOC from Fire Safety Department	Indirect	Low
54	NOC from Electricity board	Indirect	Low
55	Availability of natural ventilation in the facility	Direct	High
56	Adoption of insulation measures in the facility	Indirect	Medium
57	Adoption of green procurement policy by the facility	Indirect	Medium
58	Availability of outdoor gardens for stress relieving	Direct	Low
59	Availability of herbal & kitchen garden	Direct	Low
60	Structural Audit	Indirect	Low
61	Implementation of retrofitting measures to avoid damage due to extreme weather events	Direct	High
62	Implementation of flood resilient measures	Direct	High
63	Availability of buffer stock of essential supplies during and after extreme weather events	Direct	Medium
64	Maintenance of drains or stormwater outlets in the facility	Direct	Medium
65	Placement of critical equipment in the facility	Direct	Low
66	Heat preparedness measures in the facility	Direct	Medium
67	Availability of heat stroke rooms or makeshift wards for management of heat related illnesses	Direct	Medium

S.No.	Indicators	Impact	
		Mode of Impact	**Magnitude of impact**
68	Availability of continuous water supply source/storage to meet the hospital requirements during extreme weather events	Direct	High
69	Availability of power back up to meet the energy demand during extreme weather events	Direct	High
70	Establishment of functional committee for disaster preparedness	Indirect	Low
71	Availability of disaster preparedness plan for the facility	Indirect	Medium
72	Availability of Emergency Communication Plan	Indirect	Medium
73	Availability of emergency plan for evacuation/sheltering /resettlement	Indirect	Medium
74	Training programme for healthcare staff on disaster preparedness	Indirect	High
75	Display of IEC material on extreme weather events and disaster preparedness	Indirect	Low

List of Reference Documents to be Referred

Energy Efficiency

- List of phased out HCFCs and their alternatives are available at page no. 137 of following link: http://ozonecell.nic.in/wp-content/themes/twentyseventeen-child/Documentation/assets/pdf/1511262726987-HCFC-Booklet-final.pdf
- App for determining natural light in room: https://play.google.com/store/apps/details?id=com.doggoapps.luxlight

Water Management

- BIS 1172:1993. https://civilplanets.com/wp-content/uploads/2020/04/1172.pdf
- BIS 10500:2012. https://law.resource.org/pub/in/bis/S06/is.10500.2012.pdf
- BIS 17650 (Part 1): 2021 Water Efficient Plumbing Products Requirements Part 1 - Sanitary ware https://www.bis.gov.in/wp-content/uploads/2022/01/ARTICLE-FOR-WHATS-NEW-NEW-STANDARDS-FOR-WATER-EFFICIENT-PLUMBING-PRODUCTS-NEW.pdf
- BIS 17650 (Part 2): 2021: Water Efficient Plumbing Products-Requirements Part 2 - Sanitary Fittings https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/standard_review/Standard_review/Isdetails?ID=MjY4MzY%3D

Waste Management

- Bio medical waste management Rules, 2016. https://cpcb.nic.in/displaypdf.php?id=aHdtZC9lV01fUnVsZXNfMjAxNi5wZGY

Recommendation System

- Grafakos, S., Gianoli, A., & Tsatsou, A. (2016). Towards the development of an integrated sustainability and resilience benefits assessment framework of urban green growth interventions. *Sustainability*, *8*(5), 461.

National Centre for
Disease Control
Government of India

National Programme
on Climate Change
and Human Health

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