



Equipment maintenance and maintenance of health facility

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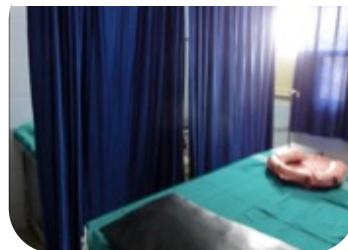


Areas of Concern-NQAS

A. Service Provision



B. Patient Rights



C. Inputs



D. Support Services



E. Clinical Services



F. Infection Control



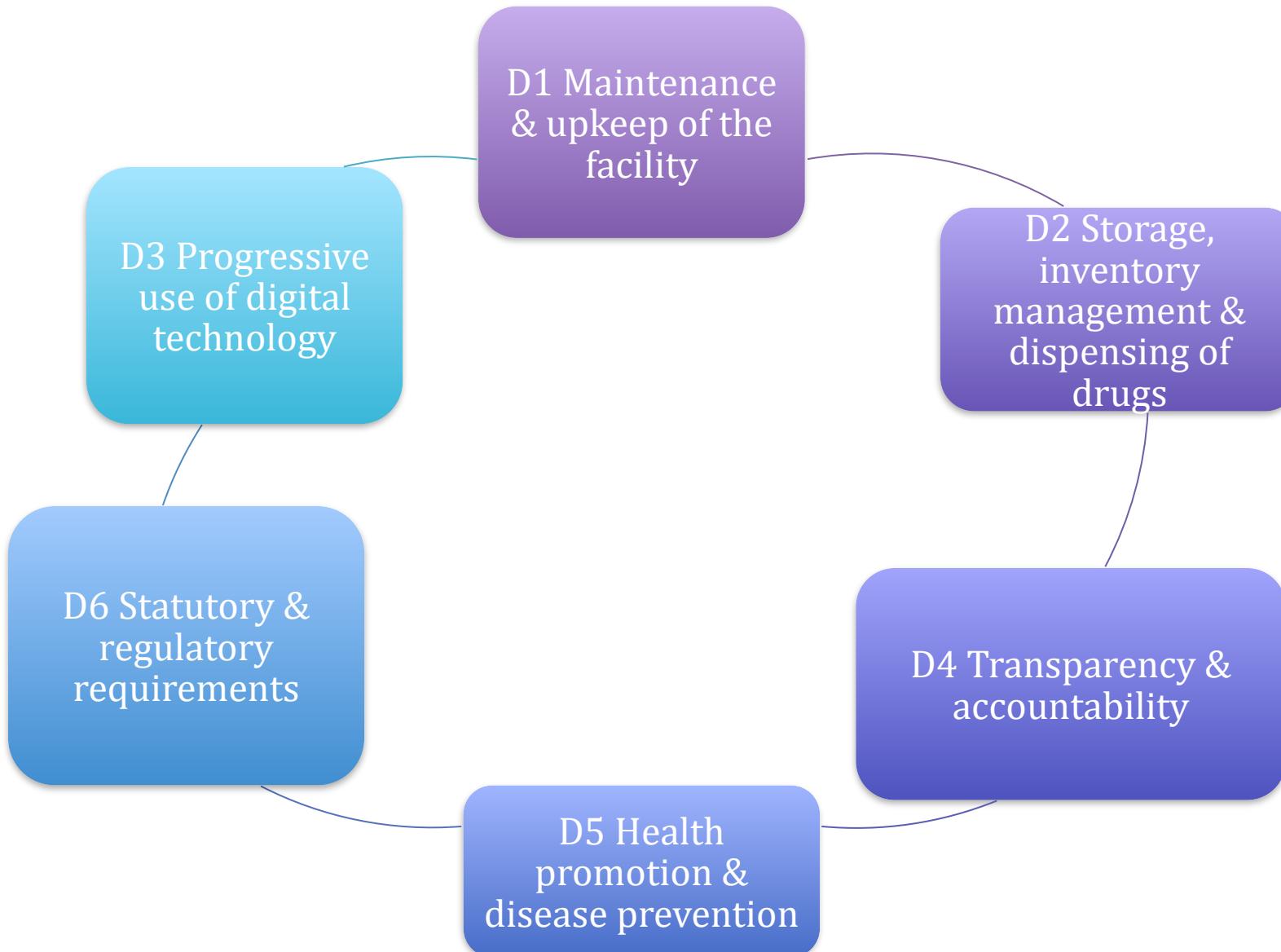
G. Quality Management



H. Outcome



AAM-SHCs



D1: The facility has established program for maintenance and upkeep of the facility

D1.1 Infrastructure

- Building colour and Branding
- Clean premises
- Periodic Maintenance of amenities
- Removal of junk
- Corrective & preventive maintenance of Equip
- Calibration check of measuring equipment

D1.2 Sanitation and Hygiene

- Clean & hygienic work environment
- Availability of cleaning material
- Use of 2 bucket system and disinfection process
- Process of safe disposal of general waste
- Availability of adequate linen

Objectives of the session

- Enhance the understanding and capacity of health staff in ensuring effective maintenance of biomedical equipment and health facility infrastructure (स्वास्थ्य कर्मियों की समझ और क्षमता को बढ़ाना ताकि वे जैव-चिकित्सीय उपकरणों तथा स्वास्थ्य सुविधा अवसंरचना के प्रभावी रखरखाव को सुनिश्चित कर सकें)
- Promoting uninterrupted service delivery, patient safety, and compliance with quality assurance standards. (निरंतर सेवा प्रदाय, रोगी सुरक्षा, तथा गुणवत्ता आँखासन मानकों के अनुपालन को प्रोत्साहित करना।)

What is maintenance?

- Maintenance in general means taking care of something so that it continues to work properly and lasts longer. (रखरखाव (Maintenance) का सामान्य अर्थ है, किसी वस्तु या उपकरण की देखभाल करना ताकि वह सही तरीके से कार्य करता रहे और अधिक समय तक टिकाऊ बना रहे)
- It involves regular checking, cleaning, repairing, and replacing parts when needed to prevent breakdowns or failures. (इसमें नियमित रूप से जांच, सफाई, मरम्मत तथा आवश्यकता पड़ने पर पुर्जों का प्रतिस्थापन शामिल होता है, जिससे खराबी या रुकावटों को रोका जा सके।)
- Maintenance = prevention + care + timely action (रखरखाव = रोकथाम + देखभाल + समय पर कार्रवाई)

Levels of equipment maintenance

- By operator (day-to-day maintenance), संचालक द्वारा (दैनिक रखरखाव)
- By in-house biomedical engineer , संस्थान के भीतर के जैव-चिकित्सीय अभियंता द्वारा
- By Original Equipment Manufacturers (OEMs) trained service engineer or trained BME, मूल उपकरण निर्माता (OEM) के प्रशिक्षित सेवा अभियंता या प्रशिक्षित जैव-चिकित्सीय अभियंता (BME) द्वारा

Type of equipment maintenance

Preventive or scheduled maintenance (निवारक या निर्धारित रखरखाव)

- This is the maintenance carried out at Predetermined intervals or according to the manufacturer's recommendation to reduce the probability of equipment failure. (यह वह रखरखाव है जो पूर्व-निर्धारित अंतरालों पर या निर्माता की अनुशंसा के अनुसार किया जाता है, ताकि उपकरण की खराबी की संभावना को कम किया जा सके।)
- The major advantage of the preventive maintenance is reduction in equipment downtime, ensures safety of equipment, extended useful life of equipment, availability during emergency (निवारक रखरखाव का प्रमुख लाभ यह है कि इससे उपकरण के निष्क्रिय समय (downtime) में कमी आती है, उपकरण की सुरक्षा सुनिश्चित होती है, उपकरण का उपयोगी जीवन बढ़ता है, तथा आपात स्थिति के दौरान उपकरण उपलब्ध रहता है।)

Breakdown or Corrective Maintenance (खराबी या सुधारात्मक रखरखाव)

- This is the maintenance carried out after fault recognition and is intended to put equipment into a state in which it can perform a required function. (यह वह रखरखाव है जो किसी खराबी की पहचान के बाद किया जाता है, और इसका उद्देश्य उपकरण को ऐसी स्थिति में लाना होता है जिसमें वह आवश्यक कार्य कर सके।)
- Analyze the reason for the breakdown/shut down and ensure early rectification. (खराबी या बंद होने के कारण का विश्लेषण करें और शीघ्र सुधार सुनिश्चित करें।)
- The user should record details of the breakdown/defect/fault and attach label to the faulty equipment so that it is not used by other staff. (उपयोगकर्ता को खराबी/दोष/त्रुटि का विवरण दर्ज करना चाहिए और खराब उपकरण पर एक लेबल लगाना चाहिए ताकि अन्य कर्मचारी उसका उपयोग न करें।)

Equipment at AAM SHC

(Ayushman Arogya Mandir - Sub-Health Centre)

Sl. No.	Equipment Name	Critical / Non-Critical	Electromedical / Non-Electromedical
1.	BP apparatus- Digital/ Sphygmomanometer	Non-Critical	Non-Electromedical
2.	Weighing machine- Electronic	Non-Critical	Non-Electromedical
3.	Hemoglobinometer	Non-Critical	Non-Electromedical
4.	Glucometer	Non-Critical	Non-Electromedical
5.	Thermometer	Non-Critical	Non-Electromedical
6.	BP apparatus- Aneroid/ Sphygmomanometer	Non-Critical	Non-Electromedical
7.	Baby weighing scale	Non-Critical	Non-Electromedical
8.	Stethoscope	Non-Critical	Non-Electromedical
9.	Near Vision chart	Non-Critical	Non-Electromedical
10.	Snellen vision chart	Non-Critical	Non-Electromedical
11.	Stadiometer	Non-Critical	Non-Electromedical
12.	Tuning fork	Non-Critical	Non-Electromedical
13.	Fetoscope	Non-Critical	Non-Electromedical

List of equipment at AAM SHC require testing/calibration

आयुष्मान आरोग्य मंदिर (उप स्वास्थ्य केंद्र) में परीक्षण/कैलिब्रेशन की आवश्यकता वाले उपकरणों की सूची)

A. For Sub Health Centre (SHC) Level

Sl. No.	List of Equipment at SHC as per IPHS 2022	Reference Equipment for Testing / Calibration
1.	Digital Hemoglobinometer	Auto - Hematology Analyzer (Gold Standard)
2.	Digital Glucometer with test strips	Biochemistry Analyzer (Using Venous Blood Sugar) (Gold Standard)
3.	Digital BP apparatus	Non-Invasive Blood Pressure (NIBP) Simulator https://www.flukebiomedical.com/products/biomedical-test-equipment/patient-simulators/bp-pump-2-nibp-blood-pressure-simulator
4.	Weighing Scale Non-Electronic	Reference Weights with high accuracy https://calibrationweights.in/?gad_source=1&gclid=Cj0KCQ-jw-ai0BhDPARIsAB6hmP4l49gRyXgaebnlE65UNe_DAAK-ag2IA-Ip1pTJipTaHualZVBRuBcQaAiWjEALw_wcB
5.	Baby Weighing Scale	Reference Weights with high accuracy https://calibrationweights.in/?gad_source=1&gclid=Cj0KCQ-jw-ai0BhDPARIsAB6hmP4l49gRyXgaebnlE65UNe_DAAK-ag2IA-Ip1pTJipTaHualZVBRuBcQaAiWjEALw_wcB

Preventive Maintenance and Calibration Frequency for Biomedical Equipment

Name of Equipment	Frequency per year*
Digital Hemoglobinometer	twice
Digital Glucometer	twice
Digital BP Apparatus	twice
Weighing scale	twice
Baby Weighing scale	twice

*Reference: Guidelines on Equipment Maintenance, Calibration & Testing - [Guidelines](#)

Sample Format for Calibration Report

Calibration Protocol & Report or Medical Equipment

Equipment Name :

Protect Class/Test :

Make :

S.No. :

Model :

Location :

Sl. No.	Measurement Parameters		Status	Remarks
1.	Electrical Test	(a) Safety Standards (b) Equipotential ground & Earthing (c) Risk of shock/fire (d) Battery Conditions		
2.	Physical Condition Test	(a) Risk of mechanical damage (b) Power supply unit		
3.	Performance Test	Specific to equipment		
4.	Calibration Test	Specific to equipment		
Formulated By: (Company Name)		Issued By :	User Department :	
Endorsed By :				
Reviewed On :				
Next Review :				

Annexure-D : Performa for Annual Equipment Inventory Survey

Name of the Health Facility :

Level of Healthcare Facility :

Details of HEMC Member :

Sl. No.	Department	Equipment Nomenclature	Quantity Held (Total)	Equipment Functional Status				Remarks
				Functional	Non-Functional	Repairable	BER	
1	Electrical	Generator	2	1	0	1	0	Unit 1 is operational but requires minor maintenance.
2	Mechanical	Compressor	3	2	1	2	0	Unit 2 is non-functional due to a mechanical issue.
3	Chemical	Storage Tank	4	3	1	3	0	Unit 3 is repairable with priority.
4	Instrumentation	Sensor	5	4	1	4	0	Unit 4 is non-functional and needs replacement.
5	Structural	Brace	6	5	1	5	0	Unit 5 is repairable but requires significant time.
6	Hydraulic	Pump	7	6	1	6	0	Unit 6 is non-functional and needs immediate attention.
7	Control	Panel	8	7	1	7	0	Unit 7 is repairable with low priority.
8	Power	Transformer	9	8	1	8	0	Unit 8 is functional and available.
9	Water	Filter	10	9	1	9	0	Unit 9 is non-functional and needs replacement.
10	Gas	Valve	11	10	1	10	0	Unit 10 is repairable with high priority.

Maintenance of Health Facility (स्वास्थ्य सुविधा का रखरखाव)

Whitewashing in uniform color

No seepages, cracks, chipping of plasters

No unwanted and outside poster

Landscaping and maintenance of open space

No leaking of taps, pipes, tanks etc

Pest and rodent control

Condemnation

Clean and hygieing surrounding

Standard D1: Implementation Points

- White wash & Branding
- Removal of outdated poster
- No water logging inside-outside
- Checklist for scheduled maintenance of basic amenities, pest & rodent control etc.
- Remove junk materials from corridor, open areas etc.
- Enlisting of equipment & scheduled maintenance
- Availability & use of 2 bucket system
- Collection & disposal of general waste

- सफेदी और ब्रांडिंग
- पुराने पोस्टर को हटाना
- कोई पानी की भराव नहीं अंदर-बाहर
- बुनियादी सुविधाओं, कीट और चूहों के नियंत्रण आदि के लिए निर्धारित रखरखाव की चेकलिस्ट
- कॉरिडोर, खुले क्षेत्रों से बेकार सामग्री हटा दें
- उपकरणों की सूची बनाना और निर्धारित रखरखाव
- दो बाल्टी प्रणाली की उपलब्धता और उपयोग
- सामान्य कचरे का संग्रह और निपटान





MAINTENANCE FORMAT

1. Basic Facility Details:

Field	Details
Name of SHC	
Ayushman Arogya Mandir Code	
State / District / Block	
Date of inspection	
Name of CHO/ANM	

2. General Infrastructure Maintenance:

Sl. No.	Area / Item	Status (✓ / X)	Remarks / Action Required
1.	Building structure (walls, roof, floor)	<input type="checkbox"/>	
2.	Boundary wall (intact)	<input type="checkbox"/>	
3.	Doors and windows	<input type="checkbox"/>	
4.	Electrical supply & lighting	<input type="checkbox"/>	
5.	Safe drinking water supply	<input type="checkbox"/>	
6.	Rainwater drainage	<input type="checkbox"/>	
7.	Accessibility (ramp, handrails, etc.)	<input type="checkbox"/>	
8.	Name board / IEC displays (clean/visible)	<input type="checkbox"/>	
9.	Equipment and furniture upkeep	<input type="checkbox"/>	
10.	Biomedical Waste management bins	<input type="checkbox"/>	
11.	Toilet facility (functional)	<input type="checkbox"/>	

Signature Section:

Name	Designation	Signature	Date
ANM / CHO			
Inspector / Supervisor			

PEST CONTROL RECORD

Date / Month/Year:

S.No.	Areas Treated	Targeted Pest	Measures taken	Pesticide used
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
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26.				
27.				

Observations and Comments:

Signature/ Stamp of the Pest Control Agency

Signature of the Infection Control Nurse LHDMH



Access Link for the video resource for the session:
<https://www.youtube.com/watch?v=NFdg3tnv-ko>

THANK YOU

**Quality & Patient Safety Division
National Health Systems Resource Centre**