

Environmental Health Risk Management Plan (EHRMP)

ICMR – Regional Medical Research Centre

Proposal entitled “**Demography Integrated Surveillance for Health Assessment DISHA on Dengue and Chikungunya in Tigiria block of Cuttack district, Odisha**”

1. Institutional Arrangements

- (i) Brief description of the proposed activity:
 Under this project, activities will be carried out in 3 different phases. During phase-1, recruitment and training of staff, MoUs for IT platform, Letters of support from appropriate authorities, development and validation of Standard Operating Procedures, infrastructure set up, demographic data collection form households, EC approval and mapping of village, households and health facilities including demographic data from minimum 2000 individuals will be accomplished.
 During Phase-2, Census will be updated, demographic report of the cohort, establishment of DSS site and EC approval to carry out longitudinal study for dengue and chikungunya will be done
 During Phase-3, development and validation of tools in local language Odia, approval from the appropriate authority to carryout longitudinal study, sample collection under the study, AFI surveillance, Standard Operating Procedures SOPs and manual of operating procedures will be developed. Laboratory investigation for dengue and chikungunya will be carried out.
- (ii) List of environments related regulatory clearances required for the activity.
 Currently the centre has a bio-safety committee which looks after the environmental health and safety related issues. The committee consists of senior scientists of the centre and external experts having domain expertise. They regularly meet once in six months to monitor and guide the centre for ensuring bio and environmental safety. The institutional bio-safety committee also takes care of the occupational hazards following the guidelines. All laboratory staff under the monitoring of the principal-investigators strictly use the personal protective measures. The centre has received authorization letter from state pollution control board, Odisha Vide letter no. 4750/SPCB/Authorization (Biomedical waste) Dated: 30.03.2017 and valid up to 31.03.2022 for the management of bio-medical wastes generated from the centre. Centre has also outsourced an agency (approved by SPCB) for transportation and disposal of bio-medical wastes. This centre also has DCGI (Drugs Controller General of India) approved research ethics committee to review and approve each and every research project carried out by the centre. Under this project, one Environmental Health Safety (EHS) committee will be constituted by the centre and all the environmental and occupational health related regulatory framework will be adhered.

Institutional Arrangement

		Yes	No	Details	Proposed Plan
1.	Is there a designated full-time staff for Environment Health and Safety (EHS) issues?	Yes		Currently, the center has formed a bio-safety committee that looks after the environmental, Occupational health and bio-safety related issues.	The center will constitute a separate EHS committee to address the Environment Health and Safety measures in the centre.
2.	Does the EHS staff handle the following?			Any other: Once a EHS committee is formed the guidelines will be drafted and the staffs will be trained on EHS.	The EHS staff appointed by the committee will look after the issues and the activity will be governed and reviewed as per
	Occupational Health and Safety	Yes			
	Waste Management	Yes			
	List of consents and regulatory	Yes			

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	clearances				Institute's guidelines for Environment Health and Safety (EHS).
	Record keeping of accidents and procedures	Yes			
	EHS trainings for staff	Yes			
	Environment Management Framework compliance for Innovate in India Project	Yes		This project will follow the Environment Management Framework by NBM, BIRAC and strictly adhere to its guideline.	
3.	Is there a reporting structure in place regarding EHS issues?	Yes		Describe: All the environmental safety related issues will be reported to the EHS committee. The EHS committee will consist of senior scientists of the institute, external experts (one senior expert being the chair person). All environmental and occupational health related issues will be submitted to the EHS committee for review and appropriate action. The EHS committee will provide appropriate directions to address the issues.	The committee will monitor the safety and suggest the concern nodal officers to rectify, in case they find any gap. They will meet every 6 months to sort out the environmental and occupational health related issues and challenges and guide appropriately.
4.	Are regular EHS trainings provided to staff?	Yes		Frequency: Currently, training on environmental and occupational health (Bio medical waste management, bio-safety, preventing exposure to hazards, fire related accidents etc.) are being carried out in the center. Such trainings are done half yearly.	Under this project, all the project staff and research team will undergo the EHS training. Afterwards refresher training will be provided on every six months.
5.	Institutional Bio-Safety Committee (IBSC)	Yes		A committee consisting of scientists and external experts to monitor and guide for bio-safety once in 6 months is in place.	
6.	Ethics Committee (EC)	Yes		ICMR-RMRC Bhubaneswar has a DCGI approved ethics committee. The ethics committee consists of reprehensive external	Usually the institution ethics committee meets every month or once in two months depending on the number of project proposals

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				members/experts from various domains such as medical, social welfare, woman representative, social activist, Legal person, SC/ST representative etc. The senior medical expert being the chairperson of the ethics committee.	for review. During the meeting, the members review the new project proposals and also review the progress of the ongoing projects. They review the ethical, scientific and the informed consent related issues pertaining to research project.
General Occupational Health and Safety					
7.	Are there Standard Operating Procedures for accidents, hazards, and other emergencies (chemical spills, heat hazards, fire hazards, radioactive hazards etc.)?	Yes		ICMR-RMRC Bhubaneswar has an institutional bio-safety committee that takes care of the occupational hazards following the guidelines. All laboratory staff under the monitoring of the principal-investigators strictly use the personal protective measures.	Display of Procedures in prominent places in the sites.
8.	Are the following in place?			All the laboratories have adequate chemical spill kits, eye wash facilities, shower stations, first aid kit, fire extinguishers as per the protocol.	Appropriate SOPs are in place to deal with such emergencies.
	Chemical spill kits	Yes			
	Eye wash	Yes			
	Shower stations	Yes			
	First Aid Kit	Yes			
	Fire Extinguishers	Yes			
	Register of accidents and injuries	Yes			
9.	Are proper signage and storage system in place?	Yes		Signage and storage system to keep samples, display of material safety data sheet in appropriate places, contingency plan with emergency contact numbers of concern officials are available.	These would be regularly updated/ replaced and reviewed regularly.
	Display of Material Safety Data Sheet (MSDS) where relevant	Yes			
	Display of emergency numbers and procedures (Person to Contact, Doctor, Ambulance, Fire Emergency, Police) displayed in all critical places	Yes			
	Signage across the facility (labs, storage, hazardous areas, etc.)	Yes			
	Are flammable materials appropriately stored to prevent fire hazards?	Yes			
10.	Are smoke detectors, fire alarms, automatic safety/shut off systems, overflow preventors, etc. in place and	Yes		List: smoke detectors, fire alarms	These would be regularly maintained.

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	regularly maintained?					
11.	Are there control measures for VOC, air emissions, high operating temperatures, pathogens/vectors etc. in place?	Yes		List: VOC, air emissions, high operating temperatures, pathogens/vectors.	This would be reviewed periodically.	
12.	Are regular mock drills conducted for emergency preparedness and safety?	Yes		Frequency (type wise): Quarterly	This will be followed as per the schedule prepared by the appointed Officer.	
13.	Are staff provided with OHS training?	Yes		Describe: The staffs will be trained once they are recruited under the project.		
Biomedical Waste (BMW)						
14.	Is there generation of biomedical waste (as described in Bio-Medical Waste Management Rules, 2016) in the grantee?	Yes		The biomedical waste produced in the facility include Human anatomical waste, Microbiological and Biotechnological waste, soiled waste, solid waste, Liquid waste	All the staff are trained on Bio-Medical waste management and all of them shall be responsible for managing the wastes (collection, segregation and handing over to out sourced agency. The out sourced agency takes care of its transportation, treatment and final disposal.	
15.	Is there trained staff to handle biomedical waste in the grantee?	Yes		All the staffs are trained for bio-medical waste management. ICMR-RMRC conducts such training regularly every 6 monthly. The PI, Co-PI and other core team members are trainers.	It will be an ongoing process. The trainers will be In-house institutional scientists and few trainers from SPCB.	
16.	Has the grantee obtained authorization from State Pollution Control Board /Pollution Control Committee?	Yes		Authorization letter from state pollution control board, Odisha Vide letter no. 4750/SPCB/Authorization (Biomedical waste) Dated: 30.03.2017 and valid up to 31.03.2022.	Separate approval will be obtained from the Odisha state pollution control board (SPCB) for the e-waste management.	
17.	Is the biomedical waste segregated at point of generation in the facility and stored in suitable containers?	Yes		Yellow	Yes	Will be treated as per Bio-Medical Waste Management (Amendment) Rules, 2018
				Red	Yes	
				White	Yes	
				Blue	Yes	

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18.	Is the bar code system for the segregated waste in place?		No	Action will be taken to install the bar code system for waste segregation.	Will follow the as per Bio-Medical Waste Management (Amendment) Rules, 2018
19.	Is the biomedical waste being sent to an authorized common BMW facility?	Yes		Name and address of CBMWF: Sani Clean Pvt. Ltd., Corp. Off.-401, N4-42F, I.R.C. Village, Bhubaneswar-751015 Distance from facility: 10 kms Frequency and Mode of transport: Everyday Who transports? Carriers with designated personnel	
20.	Does the grantee have an in-house BMW treatment facility?		No	Reason: No proper space is available	It will be taken care by the outsourced agency.
	Is the treatment facility own (individual)?		NA	Authorization: Not available	
	Is the treatment facility a shared facility in an industrial park?		NA	Distance of nearest CBWM from facility: 10 kms Types of treatment:	
21.	Are lab waste, microbiological waste and chemical liquid waste pre-treated before storing and sending to treatment facilities according to guidelines prescribed in BWM, 2016 regulations?	Yes		Types of treatment: Decontaminated with sodium hypochlorite solution, proper washing and rinsing and Autoclaving for sterilization	Compliance calendar shall be maintained.
22.	Is the liquid waste checked for active cells before sending to treatment plant?		No		Appropriate action will be taken to check the liquid wastes before its treatment/management. One microbiologist will be trained for the same.
23.	Are necessary waste pre-treatment equipment in place?	Yes		List of equipment (autoclaves, shredders,	Regular monitoring shall be undertaken.

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	Do the equipment adhere to prescribed norms by State Pollution Control Board (SPCB)?	Yes		incinerators, etc.): Autoclaves and shredders. Details of waste pre-treatment: Hypochlorite solution (as per guideline)	
24.	Are non-chlorinated plastic gloves and bags phased out in the grantee?	Yes			
25.	Are grantee's personnel involved in handling BMW provided with regular training?	Yes		Frequency: Half yearly Trainer: External & Internal	
26.	Are medical examination provided to personnel involved in BMW waste handling and are they provided with relevant immunization like Hepatitis B and Tetanus?	Yes		Frequency of medical examination: Annual Yes, vaccinated for Hepatitis B, Influenza and TT	Regularly updated and routinely done.
27.	Is a daily register for biomedical waste maintained including accident reporting record?	Yes		A register for biomedical waste is maintained in addition to the accident reporting register	This practice would be followed and checked periodically.
28.	Are annual reports on BWM submitted to SPCB as per required form (see Bio-Medical Waste Rules 2016)?		No	May be planned to do the same in future	Annual report will be submitted to SPCB as per the biomedical waste management rules.
Hazardous Waste (HW)					
29.	Is there generation of hazardous waste (as per Hazardous Waste Rules, 2016) in the grantee?	Yes		If Yes, provide a list of hazardous waste produced in the facility Chemical- Reagents, Disinfectants Biological-Microorganism contaminated wastes Flammable- Used oil from DG set If No, provide a list of all waste produced in the facility.	Currently all these wastes are managed according to the Bio medical Waste management guideline of Odisha State Pollution Control Board. For waste disposal, an OSPCB empanelled agency (Sani Clean Pvt. Ltd.) has been outsourced.
30.	Is there trained staff in the facility to identify and handle hazardous waste?		No	One staff will be trained for the same.	Based on the requirement a Consultant will be hired on need basis
E-Waste and Batteries					
31.	Does the grantee generate e-waste, produce or	Yes		Computer sets, Key boards, Tablets, mobile	Currently the e-wastes generated in the centre are

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	manufacture electrical and electronic equipment?			phones	stored within the campus of the centre.
32.	Has the grantee obtained SPCB authorization on e-waste?		No	Authorization approval from SPCB will be obtained.	Necessary steps and compliance will be done as processing for obtaining the approval has been already initiated.
33.	Does the grantee channelize the e-waste to authorized recycling or disposal facility?		No	Name and address of disposal facility/ recycler: In house or outsourced Facility:	For disposal of e-waste, an appropriate authorized agency empanel by Govt. of Odisha will be outsourced. Appropriate agency will be identified before initiation of the project.
34.	Does the grantee submit annual reports on e-waste to SPCB?		Yes	Equipment condemnation register is maintained.	
35.	Is there accident reporting and records in place?		Yes	Records are in place to document and report any accidents within the laboratory. There is a contingency plan for the laboratory available. In the event of any such accident, the bio-safety committee members along with the concern persons are immediately informed.	The bio-safety committee members along with Director of the institution and the laboratory In-charge take appropriate action to prevent and manage any accidents.
36.	Are PPEs available to staff?		Yes	Necessary PPEs are available in stock for the laboratory staff adequately.	The stock status of PPE is regularly monitored and procurement is done in time to avoid any situation of stock out.
37.	Is the grantee involved in manufacture of batteries?		No		
38.	Does the grantee generate battery waste?	Yes		The battery waste from the inverter, tablets will be generated.	The e-wastes will be collected and isolated within the premises of center for condemnation. An appropriate agency will be outsourced for disposal of e-wastes.

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Community Health and Safety and risk mitigation					
39.	Safety Transportation Management System (for transport of hazardous material)	Yes		Outsourced to agency for transportation and final disposal of the wastes.	Will follow the same for the project activities along with ensuring the contract with the outsourced agency is renewed on time.
40.	Emergency preparedness and participation of local authorities and potentially affected communities	Yes		An emergency mitigation committee (Rapid task force) consisting of core team members and local authorities from health system is constituted to ensure emergency mitigation. This will be led by the PI/Co-PI as the coordinators. Important local authorities will also be roped in to address any emergency.	PI/Co-PI will be overall responsible for constituting the emergency preparedness team and liaison with local authorities.
Other					
41.	Is the lab/room air regularly checked for microbial contamination?	Yes		Regular monthly surveillance	
42.	Are there any odor control measures in place?	Yes		Adequate facilities for ventilation, Negative pressure chambers, and exhaust fans are available to control the odor.	The ventilation and air exhaust status are routinely monitored.
43.	Are fume hoods and exhausts regularly checked and maintained?	Yes		The electrical staff maintains this.	
44.	Does the grantee use DG set > 15 KVA?	Yes		Exclusive staff in place to maintain and manage	Routine monitoring will be done.
	Does the grantee have consent for DG > 15 KVA?	Yes			
	Are emissions from boilers and DG sets regularly monitored to be within the prescribed norms?	Yes			
45.	Does the grantee have proper disposal process for solid and plastic waste in compliance to Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016?	Yes		The disposal of solid and plastic wastes is done by the Bhubaneswar Municipal Corporation on daily basis.	Regular activity will be followed and reviewed.

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46.	Is waste water treated separately by the grantee? (Liquid waste from laboratory, chemicals, fluids, solvents, medium and cultures, coolants, etc.)	Yes		Types of wastewater: Culture media Treatment of wastewater: Autoclave Chemical management in wastewater treatment plants: No	
47.	Are there any settlements, water bodies, cultivated land, or any other eco-sensitive areas near the grantee's premises?		No	Describe: Distance from premises:	
48.	Are there any buffers, fire vehicle routes in the grantee's premises?	Yes		Our center is well connected with concrete road and adequate space is available within the premises for fire vehicles.	Ensure the same in future.

Notwithstanding the above other risk (relevant to the project activities) that will be identified in the course shall be addressed as per standard mitigation monitoring parameters and manner of records keeping shall be in accordance to the recommendations of the project monitoring committee on subject experts engaged by BIRAC.