

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

Proposal entitled **Establishment of a new Demographic and Health Surveillance Site in an urban resettlement colony in Delhi with the aim to study disease specific epidemiology and conduct future vaccine trials**

1. Institutional Arrangements

(i) Brief description of the proposed activity- Establishment of a new Demographic and Health Surveillance Site in an urban resettlement colony in Delhi with the aim to study disease specific epidemiology and conduct future vaccine trials. This is a biomedical research activity. (ii) List of environments related regulatory clearances required for the activity- No environmental related regulatory clearances required for this activity.					
Institutional Arrangement					
		Yes	No	Details	Proposed Plan
1.	Is there a designated full-time staff for Environment Health and Safety (EHS) issues?	✓		Institutional Bio-Safety Committee has been designated for reviews and requirements regarding health and safety from time to time. Environmental- Occupational Health and Safety issues. The committee has 4 internal members, including Microbiologist, Deputy Director, Clinician and Administrator. This committee handles Occupational Health and Safety, Biomedical waste management, Biosafety accident reporting and related regulatory requirements.	Institutional Bio-Safety Committee the requirements regarding health and safety from time to time.
2.	Does the EHS staff handle the following?			Any other:	The EHS staff will look after the issues and the activity is reviewed by the Institutional Bio-Safety Committee lead (Microbiologist)

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

	Occupational Health and Safety	✓		Described above	
	Waste Management	✓		Described above	
	List of consents and regulatory clearances	✓		Described above	
	Record keeping of accidents and procedures	✓		Described above	
	EHS trainings for staff		✓		Periodic staff training will be scheduled and followed.
	Environment Management Framework compliance for Innovate in India Project		✓		The NBM BIRAC Environmental Management Framework will be followed.
3.	Is there a reporting structure in place regarding EHS issues?		✓	Describe:	A structured reporting system will be put in place for EHS issues.
		Yes	No	Details	Proposed Plan
4.	Are regular EHS trainings provided to staff?		✓	Frequency:	Periodic staff training will be scheduled and followed. Frequency shall be as per guidelines of State pollution Control Board (SPCB).
5.	Institutional Bio-Safety Committee (IBSC)	✓		Institutional Bio-Safety Committee has been designated for planning and implementing measures for Environmental-Occupational Health and Safety issues. The committee has 4 internal members, including Microbiologist, Deputy Director, Clinician and Administrator. This committee handles Occupational	

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				Health and Safety, Biomedical waste management, Biosafety accident reporting and related regulatory requirements.	
6.	Ethics Committee (EC)	✓		The Ethics Review Committee of CHRD-SAS has 14 members: 4 internal 10 external. The committee follows procedures as laid down in the Standard Operating Procedures	Quality Assurance team is in place to monitor project adherence with respect to the Standard Operating Procedures on regular basis.
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.)?	✓		The Standard Operating Procedures address actions to be followed for accidents, hazards, spills and other emergencies. These Standard Operating Procedures are accessible to all and concerned staff are trained in them.	Display of Procedures in prominent places in the sites.
8.	Are the following in place?				Appropriate SOPs are in place to deal with such emergencies.
	Chemical spill kits	✓		Chemical spill kits are available in the working area	
	Eye wash	✓		Accessible eye wash station in the laboratory working area	
	Shower stations		✓	Current research activities do not require shower stations	
	First Aid Kit	✓		First Aid Kit containing all necessary articles and medicines accessible to all	

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

	Fire Extinguishers	✓		Fire Extinguishers placed at appropriate locations and monitored regularly	
	Register of accidents and injuries	✓		Register for documenting accidents and injuries available with relevant administrative staff	
		Yes	No	Details	Proposed Plan
9.	Are proper signage and storage system in place?	✓		All areas have appropriate signages, restricted access for storage system are displayed	These would be regularly updated/replaced and reviewed regularly.
	Display of Material Safety Data Sheet (MSDS) where relevant	✓		Available at relevant places	
	Display of emergency numbers and procedures (Person to Contact, Doctor, Ambulance, Fire Emergency, Police) displayed in all critical Places	✓		Displayed at all critical places	
	Signage across the facility (labs, storage, hazardous areas, etc.)	✓		Appropriate signages displayed	
	Are flammable materials appropriately stored to prevent fire hazards?	✓		Flammable materials appropriately are stored in fire safe cabinets	
10.	Are smoke detectors, fire alarms, automatic safety/shut off systems, overflow preventors, etc. in place and regularly maintained?	✓		List: Fire alarm and smoke detectors at relevant places.	These would be regularly maintained.
11.	Are there control measures for VOC, air emissions, high operating temperatures, pathogens/vectors etc. in place?	✓		List: Operations inside biosafety cabinet equipped with Hepa filters.	This would be reviewed periodically.
12.	Are regular mock drills conducted for emergency preparedness and safety?	✓		Frequency (type wise): Every three months.	
13.	Are staff provided with OHS training?		✓	Describe:	OHS training will be provided to all staff.
Biomedical Waste (BMW)					

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

14.	Is there generation of biomedical waste (as described in Bio-Medical Waste Management Rules, 2016) in the grantee?	✓		List of biomedical waste produced in the facility Surgical gloves Mask Cotton swabs Syringes Needles Pipette Tips Blood culture bottles Microbiological culture plates Blood products SST Vacutainers Expired medicines	All biomedical waste generated and segregated in colour coded bags and specified containers as per the Biomedical Waste Rules, 2016 and collected by the authorized agency, Cultures, fluids and media are treated separately. They are sterilized by autoclaving before handing over to the contracted authorized agency (Biotic Waste Solutions Pvt Ltd)
		Yes	No	Details	Proposed Plan
15.	Is there trained staff to handle biomedical waste in the grantee?	✓		Concerned staff appropriately trained to handle biomedical waste. Refresher trainings provided periodically	This is an ongoing process.
16.	Has the grantee obtained authorization from State Pollution Control Board /Pollution Control Committee?	NA		Disposal of Biomedical waste is by an agency authorized by the State Pollution Control Board	Biotic Waste Solutions Pvt Ltd. 46-47, SSI Industrial Area, GT Karnal Road, Delhi-110033 Email: info@biotic.co.in
17.	Is the biomedical waste segregated at point of generation in the facility and stored in suitable containers?	✓		Yellow Cotton swabs, discarded reagents, disinfectants, microbiological culture plates,	As per Bio-Medical Waste Management (Amendment) Rules, 2018

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				petri dishes, discarded linen, expired medicines, masks, plastic ampoules and vials.	
			Red	Syringes without needles and Gloves.	
			White	Needles, Syringes with Needles, Needles from needle tip cutter/Burner, Scalpels, Blades.	
			Blue	Blood culture bottles, contaminated broken and discarded glass, vials, ampoules and microscopic slides.	
18.	Is the bar code system for the segregated waste in place?		✓	Currently the external agency has not provided a bar code system for the segregated waste that	Will follow the as per Bio-Medical Waste Management (Amendment) Rules, 2018

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				they collect	
19.	Is the biomedical waste being sent to an authorized common BMW facility?	✓		<p>Name and address of CBMWF: Biotic Waste Solutions Pvt Ltd. 46-47, SSI Industrial Area, GT Karnal Road, Delhi-110033 Email: info@biotic.co.in</p> <p>Distance from facility: 1.5 hours(40 kms)</p> <p>Frequency and Mode of transport: Three times a week Transportation vehicle</p> <p>Who transports? Biotic Waste Solutions</p>	
20	Does the grantee have an in-house BMW treatment facility?		✓		As the organization outsources the entire BMW to external authorized agency, there is no plan to establish in-house facility currently
	Is the treatment facility own (individual)?		✓		
	Is the treatment facility a shared facility in an industrial park?		✓		
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?	✓		Types of treatment: Moist-Sterilization (Autoclaving)	
22	Is the liquid waste checked for active cells before sending to treatment plant?	✓		All liquid waste is sterilized before sending to	

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				treatment plant.	
23	Are necessary waste pre-treatment equipment in place?	✓		List of equipment (autoclaves, shredders, incinerators, etc.): Autoclave	Details of waste pre-treatment: Blood culture bottles Microbiological culture plates and tubes
	Do the equipment adhere to prescribed norms by State Pollution Control Board (SPCB)?	✓			
24	Are chlorinated plastic gloves and bags phased out in the grantee?	✓		Chlorinated plastic gloves and bags not used for any project activity.	
25.	Are grantee's personnel involved in handling BMW provided with regular training?	✓		Frequency: Yearly Trainer: Microbiologist, Lab lead	
26.	Are medical examination provided to personnel involved in BMW waste handling and are they provided with relevant immunization like Hepatitis B and Tetanus?	✓		Frequency of medical examination: Yearly	Routinely done.
27.	Is a daily register for biomedical waste maintained including accident reporting record?	✓		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)?		✓		Annual report forms IV will be submitted to SPCB as per the biomedical waste management rules.
Hazardous Waste (HW)					
		Yes	No	Details	Proposed Plan
29.	Is there generation of hazardous waste (as per Hazardous Waste Rules, 2016) in the grantee?		✓	List of waste produced in the facility All biomedical waste generated and segregated in colour	

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				coded bags and specified containers as per the Biomedical Waste Rules, 2016 and collected by the authorized agency, Cultures, fluids and media are treated separately. They are sterilized by autoclaving before handing over to the contracted authorized agency (Biotic Waste Solutions Pvt Ltd)	
30.	Is there a secure location for storage of HW with proper signage?	NA		Describe how each item is stored – platforms, distances from critical installations/movement areas, spill collectors, gas escape facility, etc.	
	Are hazardous waste stored for more than 90 days in the grantee’s premises?	NA			
E-Waste and Batteries					
		Yes	No	Details	Proposed Plan
32	Does the grantee generate e-waste, produce or manufacture electrical and electronic equipment?		✓	Our organization does not produce or manufacture electronic or electrical equipment. In case any e-waste is generated during project activities, it will be disposed using a certified data sanitation service provider	-
33	Does the grantee generate battery waste?	✓		Batteries are used to support power backup system in the organization. Battery waste generated is that of	-

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				nonfunctional batteries at the end of their life span.	
34	Does the grantee deposit the battery waste to registered recycler /dealer/manufacturer /reconditionner /collection center?	✓		Expired batteries are handed over to the authorized dealer. Name and address: GR Power Shoppe Block H Lajpat Nagar 2 Rd, Jangpura Extension, F Block, Lajpat Nagar I, Lajpat Nagar, New Delhi, Delhi 110024	
Community Health and Safety and risk mitigation					
35	Emergency preparedness and participation of local authorities and potentially affected communities		✓		Emergency preparedness plan will be developed and followed as and when needed.
Other					
36.	Is the lab/room air regularly checked for microbial contamination?	✓		Done Periodically	
37.	Are there any odor control measures in place?	✓		Adequate ventilation and exhaust fans in place. Air Fresheners used regularly	Routinely monitored.
38.	Are fume hoods and exhausts regularly checked and maintained?	✓		Regularly checked and maintained	
39.	Does the grantee use DG set > 15 KVA?	✓		Currently not being used in compliance to the State National Green Tribunal Act requirements	When used it will be in compliance to the Sate National Green Tribunal Act requirements and regular monitoring
	Does the grantee have consent for DG > 15 KVA?	NA		Not Applicable	
	Are emissions from boilers and DG sets regularly monitored to be within the prescribed norms?		✓		Regular monitoring of emissions from and DG sets will be initiated

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

40.	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?	✓	Describe: All generated waste is segregated at source. The solid waste generated is collected by the authorized personnel from the Municipal Corporation of Delhi and processed and disposed through their system. A compost generation unit, the AGGA decomposer is installed in the central office for processing the kitchen waste generated in the organizational kitchen. All biomedical waste generated is segregated in color coded bins and bags.	It is collected, transported, treated and disposed by M/S Biotic Waste Solutions which is a common bio-medical waste management facility authorized by the Delhi Pollution Control Committee.
41.	Is wastewater treated separately by the grantee? (Liquid waste from laboratory, chemicals, fluids, solvents, medium and cultures, coolants, etc.)	✓	Cultures, fluids and media are treated separately. They are sterilized by autoclaving before handing over to the contracted authorized agency (Biotic Waste Solutions Pvt Ltd)	
42.	Are necessary provisions for noise cancellation in place?	✓	Describe: Appropriate solid partitions are in place to curtail noise pollution.	The noise levels will be monitored and be maintained periodically.
43.	Are there any buffers, fire vehicle routes in the grantee's premises?	✓	The grantee's premises have a big	

Environmental Health Risk Management Plan (EHRMP)

Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS)

				gate, ramp and accessible roads for reaching the premises	
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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.