

# Climate Adaptive Action Plans to Manage Heat Stress in Indian Cities

## Medical Stakeholders Training Needs Assessment of Heat Stress Management for Bhubaneswar

### Workshop Summary

**Date:** 24th February 2020

**Venue:** IIPH Bhubaneswar



INDIAN  
INSTITUTE OF  
PUBLIC HEALTH  
BHUBANESWAR



## Medical Stakeholders Training Needs Assessment of Heat Stress Management for Bhubaneswar

**24<sup>th</sup> February 2020, Time: 10.30 am – 1.00 pm**

**Venue: IIPH Bhubaneswar, Odisha**

AGENDA	
Time	Sessions
11.30 – 1.40 am	Registration – Tea/ Coffee
Inaugural Session	
11.40 – 11.45 am	<b>Inaugural Remarks</b>
	- Dr. Dinabandhu Sahoo, Team Lead, State Health Systems Resource Centre, National Health Mission, Govt of Odisha
11.45 – 11.50 am	<b>Welcome Address</b>
	- Dr. Bhuputra Panda, Associate Professor IIPHB
11.50 – 12.00 pm	<b>Introduction to the subject and expectations from the workshop</b>
	- Mr. Rohit Magotra, Deputy Director, IRADe
12.00 – 12.30 pm	<b>Administration of the training needs assessment (TNA) tool to participants</b>
	- Dr. Bhuputra Panda, Associate Professor IIPHB - Mr. Rohit Magotra, Deputy Director, IRADe
12.30 – 1.00 pm	<b>Discussion and conclusion</b>
	- All Participants

### Key Objectives of the workshop

- 30 Medical officers will be attending the Training Need Assessment of Heat Stress Management for Bhubaneswar
- To conduct a training needs assessment on Heat Stress Management
- To enhance the capacities of Medical Officers for better management of heat-related illnesses
- To develop a list of topics to be included in the Heat Stress Management Manual

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### Training Needs Assessment of Heat Stress Management in Public Health Care Institutions, Bhubaneswar

Date: 24<sup>th</sup> February 2020 | Venue: IIPH Bhubaneswar

**Lead by:**

Mr. Rohit Magotra, IRADe

Dr. Dinabandhu Sahoo, National Health Mission, Govt of Odisha

Dr. Bhuputra Panda, IIPHB.

**Key Objectives**

1. To conduct a training needs assessment on Heat Stress Management.
2. To enhance the capacities of Medical Officers for better management of heat-related illnesses.
3. To develop a list of topics to be included in the Heat Stress Management Manual.

**Feedback from Medical Stakeholders**

- Strengthening the training programme for Heat Stress Treatment
- Grassroot level training (ASHA, AWW)
- Participation of the public in policymaking
- BCC and IPC should be intensified at low-economic areas
- Special treatment guidelines for different vulnerable groups
- Government rules for Heat Stress medications
- Capacity building for early detection
- An integrated approach with other departments
- Diagnosis training
- How other diseases or factors impact heat stress impact on health
- Skill updating
- Rural heat stress awareness programmes required
- Dissemination of Knowledge about existing policies to medical stakeholders
- Heat Stress relationship to human behaviour. Heat stress and Behavioral changes in the community
- Practical field visit training, observation and reporting

**IRADe – IIPH Bhubaneswar Medical Stakeholder Training**

Date: 24<sup>th</sup> February 2020 | Venue: IIPH Bhubaneswar

**Initial Issues Raised at IIPH-B, Pre-Meeting with**

Dr. Dinabandhu Sahoo, Team Lead, State Health Systems Resource Centre, National Health Mission,

Govt of Odisha. *And* Dr. Bhuputra Panda, IIPHB

1. Reporting Mechanism: of Heat Stress at ground level is difficult (Mr. Panda).
2. Reference Mechanism: needs to be clarified (Mr. Panda).
3. AMD module needs to be translated into Odiya.
4. The date for Training to be discussed with the Commissioner.
5. Existing Heat Stress Adaptation Plans
  - ❖ Heatstroke management – training for all doctors – BSC CSC.
  - ❖ Ice packs.
  - ❖ Provision of funds for water source and cleanliness.
  - ❖ Improvement of Early warning system from Government.
  - ❖ Heat Stress Prevention for Children: March – June leave.
  - ❖ Heat Stress Prevention for Workers: 11 am – 3 pm no work – Govt of Odisha.
  - ❖ Room cooling methods.
  - ❖ Data on heat stress might be available, Heat Stroke Death Data available.
  - ❖ Training is conducted – end of march – Module available.

# **Climate Adaptive Action Plans to Manage Heat Stress in Indian Cities**

Report on

**Training needs assessment of health service providers on  
heat stress management, Bhubaneswar, Odisha**



**PUBLIC  
HEALTH  
FOUNDATION  
OF INDIA**

Prepared by:

**Indian Institute of Public Health, Bhubaneswar**

February 2020

(Revised in June 2020)

Indian Institute of Public Health, Bhubaneswar

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## List of Abbreviations

ANM	:	Auxiliary Nurse Midwife
ASHA	:	Accredited Social Health Activist
BCC	:	Behavioral Change Communication
BMC	:	Bhubaneswar Municipal Corporation
CHC	:	Community Health Centre
DPH	:	Directorate of Public Health
EWS	:	Early Warning System
HAP	:	Heat Action Plan
H&UD	:	Housing & Urban Department
IEC	:	Information, Education and Communication
IMD	:	Indian Meteorological Department
IIPHB	:	Indian Institute of Public Health, Bhubaneswar
MHU	:	Mobile Health Unit
NHM	:	National Health Mission
OSDMA	:	Odisha State Disaster Management Authority
PHC	:	Primary Health Centre
RI	:	Routine Immunization
SDH	:	Sub-Divisional Hospital
SIHFW	:	State Institute of Health & Family Welfare
SRC	:	Special Relief Commissioner
SRO	:	Special Relief Organization
ULB	:	Urban Local Bodies
VHND	:	Village Health Nutrition Day

WMO : World Meteorological Day

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## INTRODUCTION

A national assessment conducted by the Indian government on climate change projects increasing temperatures for India through the 21st century, including increasing extreme heat events. Temperature extremes are a major underlying weather-related cause of mortality in much of the world and the leading cause of directly-mediated weather-related mortality. In India several cities and states, such as Ahmedabad, Odisha, and Telangana have formulated action plans to address this issue of heat wave stress. These action plans contain measures insofar as capacity building of healthcare professionals, updating records to track emergency cases, running specialized dispensaries during peak summer, collecting real-time information, regulating timing of construction and outdoor workers, etc. is concerned. However, there is a need to formulate robust monitoring and evaluation mechanisms to be able to track their progress right up to the district level in order to provide the much-needed urgency in the government machinery.

## LITERATURE REVIEW

### **Gujarat Heat Wave Action Plan**

The city of Ahmedabad had a major heat wave in May 2010, which led to 1,344 additional deaths registered in the city during the month of May. <sup>1</sup> The 2010 heat wave was a wakeup call that intergovernmental agency action, preparedness, and community outreach was needed to save lives. Rising to this challenge of climate change and increasing heat waves, the Ahmedabad Municipal Corporation (AMC) is working to prepare health systems and residents against dangerous heat waves. The first Heat Action Plan (HAP or Plan) was prepared in 2013 by the AMC with help from national and international academic experts and learning from global best practices on early warning systems and heat adaptation. The 2017 Ahmedabad Heat Action Plan aimed to implement four key strategies:

- **Building Public Awareness and Community Outreach:** to communicate the risks of heat waves and implement practices to prevent heat-related deaths and illnesses. Disseminating public messages on how to protect people against extreme heat through media outlets and informational materials such as pamphlets and advertisements on heat stress prevention. Efforts also include the use of social media such as SMS, text messages, email, radio and mobile applications such as WhatsApp. Special efforts are made to reach vulnerable populations through inter-personal communication as well as other outreach methods.

- Utilizing an Early Warning System and Inter-Agency Coordination: to alert residents of predicted high and extreme temperatures. The Indian Meteorological Department shares a daily five-day forecast with the Heat Action Plan Nodal Officer during the heat season. The AMC has created formal communication channels to alert governmental agencies, the Met Centre, health officials and hospitals, emergency responders, local community groups, and media outlets of forecasted extreme temperatures.
- Capacity Building Among Health Care Professionals: to recognize and respond to heat-related illnesses, particularly during extreme heat events. Such trainings focus on primary medical officers and other paramedical staff, and community health staff so they can effectively prevent and manage heat-related cases so as to reduce mortality and morbidity.
- Reducing Heat Exposure and Promoting Adaptive Measures: by undertaking new efforts including mapping of high-risk areas of the city, increasing outreach and communication on prevention methods, access to potable drinking water and cooling spaces during extreme heat days. Collaboration with non-governmental organizations is also identified as a means to expand outreach and communication with the city's most at-risk communities.

### **Odisha Heat Wave Action Plan**

It is proposed that strengthening of the heat action plan for Odisha will be carried out in the following phases:

1. Determining threshold temperature for multiple cities of Odisha.
2. Conducting vulnerability assessment in more cities and designing an intervention.

### **METHODOLOGY**

A needs assessment should be designed to identify and prioritize needs. The first step in developing a training program is to determine whether training is needed. A training needs assessment provides some certainty that the time, money and resources used to develop and conduct training will deliver desired performance-based results (Cekada, 2011). We aim to answer the following specific questions:

- How is a training needs assessment conducted?
- What model can be followed?

- Does this model work across different disciplines or industries?

With this context, we conducted a training needs assessment of the health service providers in public and private hospitals in Bhubaneswar about heat stress management of patients attending those institutions. We used a Likert's five-point scale wherein 1 signifies no importance and 5 signifies the highest importance of a topic to be included in the proposed training manual. The respondents included general practitioners (3), specialist doctors (5) and staff nurses (4) involved in actual management of heat stress related cases. Total of 12 respondents were administered a questionnaire and asked to rank their response using the 1-5 scale. Data were subsequently entered in to an excel sheet and analysed. Subsequently the TNA tool was administered to 27 medical officers in IIPHB on 24th February, 2020. The findings are presented separately.

Training need assessment was conducted in a workshop mode in IIPHB on 24th February 2020. It involved 27 medical officers of Govt of Odisha, Health and Family Welfare Department (list attached at the end of the document). The workshop started with a round of self-introduction and objective setting. Dr. Dinabandhu Sahoo, Team Leader of State Health Systems Resource Centre (SHSRC), National Health Mission, Government of Odisha inaugurated the workshop with his opening remarks about the importance of conducting this workshop and the need to reinforce and train doctors/service providers about the clinical protocols for effective management of heat stress related cases in primary health centers and district hospitals. He described the various steps already taken by the Government of Odisha with regard to improving preparedness of health care institutions for heat stress management. He cited examples of having air-conditioned rooms in every institution dedicated to heat stress cases, availability of medicines and instruments to clinically manage cases and establishment of a good reporting system to maintain registers and reports of mortalities and morbidities associated with heat stress.

Mr. Rohit Magotra from IRADe, New Delhi presented the heat stress related projected losses in terms of loss of lives and livelihood by 2100 in global and Indian context. He emphasized on public health preventive measures and adherence to clinical protocols while managing such cases. Citing examples of other cities like Rajkot and Delhi, he highlighted about the need to strengthen the IEC/BCC, advocacy and public awareness dimensions for successful reduction of mortalities and morbidities associate with heat stress. He further presented the key findings of the household survey that was carried out by IIPHB in the summer of 2019. It was evident that the daily wage loss in Bhubaneswar was one of the highest due to heat stress. The urban hot spots in Bhubaneswar was also found to have spread across 10 wards across the city and the ambiance temperature differences were found to be as much as 3-4 degree Celsius during the last summer.

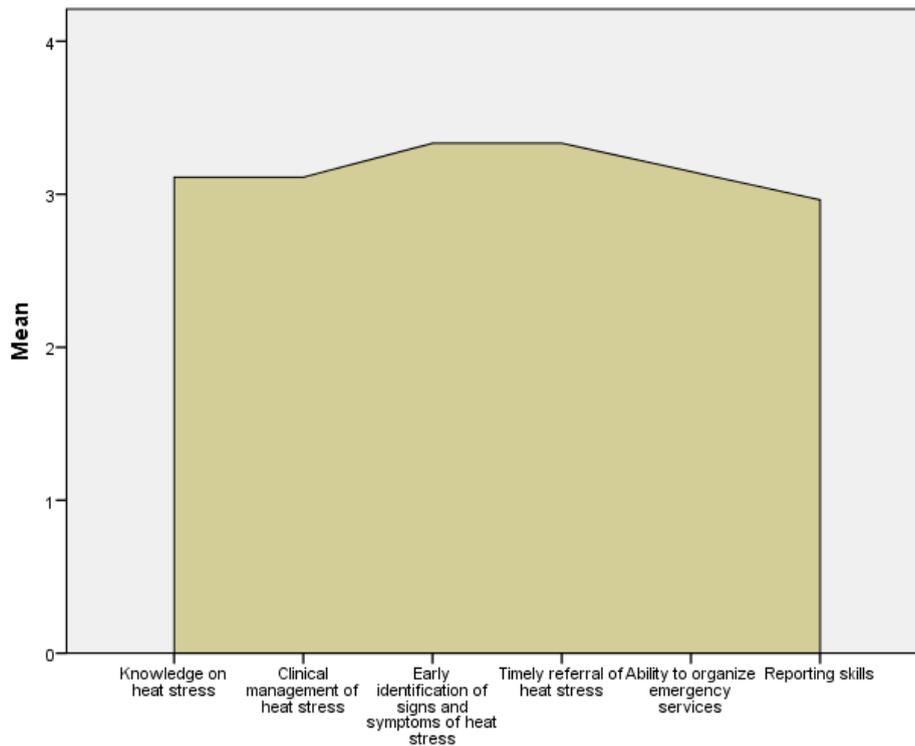
Dr. Bhuputra Panda from IIPHB introduced the training need assessment tool that was designed by IIPHB and administered the tools to the participants. The tool consisted of 10 questions, some were to be 'ranked' while some questions were 'binary'. Results were summarized through manual analysis of the questionnaires. Total 27 respondents participated in the study. Informed consent was obtained from each of them and there was no monetary incentive given to any of the participants for taking part in the exercise.

Table 1 -Existing level of understanding and expertise on heat stress

Topics	Mean	Std. Deviation
Knowledge on heat stress	3.11	0.847
Clinical management of heat stress	3.11	1.050
Early identification of signs and symptoms of heat stress	3.33	1.109
Timely referral of heat stress	3.33	1.209
Ability to organize emergency services	3.15	1.064
Reporting skills	2.96	1.055

The level of understanding and expertise on heat stress among the respondents has been found to be above average (>3 on a scale of 1 to 5) in all the topics except related to the reporting skills, which was below average (<3 on a scale of 1 to 5) as shown in **Table 1**.

Figure 1 - Graph showing existing level of understanding and expertise on heat stress



**Figure 1** presents the graph showing existing level of understanding and expertise on heat stress among the participants. It shows that the highest means were observed for the topics, (i) Early identification of signs and symptoms of heat stress, and (ii) Timely referral of heat stress while the lowest mean was observed for Reporting skills.

Table 2 - Level of preparation on various aspects of heat stress management

N=27	Knowledge on heat stress	Clinical management of heat stress	Early identification of signs and symptoms of heat stress	Early identification of signs and symptoms of heat stress	Timely referral of heat stress	Ability to organize emergency services	Reporting skills
Level of preparation	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Somewhat prepared	25.9	7.4	7.4	7.4	7.4	7.4	11.1
Well prepared	40.7	18.5	11.1	11.1	18.5	14.8	18.5
Very well prepared	29.6	37.0	37.0	37.0	25.9	44.4	37.0
Highly prepared	3.7	29.6	29.6	29.6	29.6	22.2	29.6

The level of preparation on the given 7 aspects of heat stress management is shown as percentage of total responses obtained for different levels of preparation in **Table 2**. The levels of preparation were found to be well to very well for Knowledge on heat stress and very well to highly prepared for all other aspects.

Table 3 - Possible topics for training on heat stress

Attributes	Frequency	Percent
Awareness about heat stress	11	40.7
Problems associated with heat stress	14	51.9
Prevention and management	19	70.4
Treatment	15	55.6
Communication, IEC	15	55.6
Heat stress bias	16	59.3
Current level of expertise	16	59.3
Technical adaptability of health unit	19	70.4
Operation support given by government	19	70.4
Inter-agency coordination	22	81.5

Responses for improvement required among the mentioned topics for training on heat stress is shown in **Table 3**, highest frequency and percentage was for the Inter-agency coordination followed by Prevention and management, Technical adaptability of health unit and Operation support given by government. Majority also considered improvements required in Heat stress bias, Current level of expertise, Treatment, Communication-IEC and Problems associated with heat stress. Awareness about heat stress was cited the least to be considered for training among other options.

Table 4 - Dimensions of heat stress management

Attributes	Frequency	Percent
Are you qualified to handle cases?		
Yes	7	25.9
No	20	74.1
Are you given mentoring?		

Attributes	Frequency	Percent
Yes	4	14.8
No	23	85.2
How often you consult external source?		
Very often	8	29.6
Sometimes	17	63.0
Rarely	2	7.4
Is more training needed?		
Yes	26	96.3
No	1	3.7
Would you like to attend a training?		
Yes	19	70.4
No	7	25.9
How long the training should be?		
One-day	3	11.1
Two-days	10	37.0
Three-days	14	51.9
Any other specific skills you would like to learn?		
Yes	25	92.6
No	1	3.7

Responses for the dimensions of heat stress management by the participants are summarized in **Table 4**. 74% of the participants respond that they are not qualified to handle cases. About 85% of the participants say that they are not provided enough mentoring to undertake successful management of cases. More than 90% of the respondents say that they consult external sources to handle cases. All except one respondent feel that more training is needed to deal with heat stress cases in the hospital while only 70% of the respondents show willingness to attend training workshops conducted on this topic. However, about 52% respondents were in favour of a 3-day training program, 37% were for a 2-day training program and 11% for a 1-day training program. More than 92% respondents were willing to learn other specific skills on heat stress management and the suggested topics have been enlisted below in **Table 5**.

Table 5 - Suggested topics for development of a training manual on heat stress management

Suggestions
Behaviour change
Better management of hospital
Changing behavior
Coordination
Diagnosis Referral Initial treatment
Diagnosis, prevention and management Complications of heat stress
Diagnosis, prevention and treatment
Early diagnosis and referral
Behaviour change of population
Early identification Clinical protocol
Early identification Vulnerable population Infrastructure and other requirements
Effects of heat stress on health
Field demonstration Public awareness Multi-sectoral approach
Folk show demo on emergency
IEC/BCC First aid Clinical protocols
Management of heat stress Policy measures How to reduce economic loss
Management of NCD during heat stress Management of stress Inter departmental coordination Clinical management Practical approach
Medico-legal aspects Morbidity indicators Govt guidelines Incentives
NCD and heat stress Human behaviour change Policy change
Practical training IEC/BCC
Prevention knowledge Management knowledge
Prevention of heat stress Early identification Current policies
Reporting Heat stress bias
Reporting skills Consequences of heat stress

## CONCLUSION

The TNA report highlights the importance of heat stress management related training status and gaps amongst the health service providers across public and private settings, in Odisha. It indicates that there is a need to impart training in key proposed themes with focus on specific domains with respect to clinical management of heat stress cases for the health care providers as to enable them manage heat stress cases more efficiently. This exercise offered several specific suggestions from the professionals which may be included in the preparation of the training manual. The ten most important topics to be included in the training manual were also validated by this assessment. Finalization of the training manual, local translation and adaptation by the state government are the next logical steps to complete the capacity building of health care professionals in Odisha.

## ANNEXURES

### Annexure-1: Agenda

## Training Needs Assessment of Heat Stress Management in Public Health Care Institutions, Bhubaneswar

### Agenda

Date: 24<sup>th</sup> Feb, 2020

Venue: IIPH Bhubaneswar

Timing	Topic	Speakers
11.30 – 1.40 am	Registration	
<b>Inaugural Session</b>		
11.40 – 11.45 am	Inaugural Remarks	Dr. Dinabandhu Sahoo, Team Lead, State Health Systems Resource Centre, National Health Mission, Govt of Odisha
11.45 – 11.50 am	Welcome Address	Dr. Bhuputra Panda, IIPHB
11.50 – 12.00 pm	Introduction to the subject and expectations from the workshop	Mr. Rohit Magotra, IRADe, New Delhi
12.00 – 12.30 pm	Administration of the training needs assessment (TNA) tool to participants	Dr. Bhuputra Panda, IIPHB Mr. Rohit Magotra, IRADe
12.30 – 1.00 pm	Discussion and conclusion	All

#### Key Objectives of the workshop

- To conduct a training needs assessment on Heat Stress Management
- To enhance capacities of Medical Officers for better management of heat related illnesses
- To develop a list of topics to be included in the Heat Stress Management Manual

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Annexure-2: Training Needs Assessment of Heat Stress Management in Public Health Institutions, Bhubaneswar

## Training Needs Assessment Of Heat Stress Management In Public Health Care Institutions, Bhubaneswar

### IIPH-Bhubaneswar in collaboration with IRADe New Delhi

A training needs assessment identifies individuals' current level of competency, knowledge and/or skills in one or more areas of interest and compares it with the level required to discharge his/her job effectively. The difference between the current and required competencies can help determine training needs. Assessments can be conducted at any time but are often done during performance reviews. It is beneficial to perform these assessments periodically<sup>1</sup>.

The basic questions that guide to perform a training needs assessment are:

- What is the goal?
- What skills do staff need?
- What skills do staff currently have?
- What knowledge gaps exist within the team?
- What training will help to close these training gaps?
- How often will you repeat the training needs analysis process?

#### How to perform a gap analysis?

There are many different methods for conducting a gap analysis. The method for identifying the gap will depend on the organization and the situation. Depending on the situation, it may be helpful to use one or more gap analysis methods. Some gap analysis assessment tools are:

- **Individual interviews.** Individual interviews may be conducted with employees, supervisors, senior managers and even sometimes clients/customers or outside vendors. The information gathered can identify the gaps that an organization needs to address.
- **Focus groups.** Unlike individual interviews, using focus groups involves simultaneously questioning a number of individuals about training needs. The participants brainstorm about all the training needs they can think of and write them on a flip chart.
- **Surveys, questionnaires and self-assessments.** Surveys generally use a standardized format and can be done in writing, electronically or by phone.

**Observations.** Sources for observation include a supervisor's direct observation and input, on-the-job simulations of work settings, and written work samples.

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**Please tick the responses most appropriately**

1. How prepared are you in terms of your perceived level of expertise and the required level of expertise?

(Highly unprepared) 1 ---2----3-----4-----5 (Highly prepared)

Sl. No.	Attributes	1	2	3	4	5
A	Knowledge on heat stress					
B	Clinical management of heat stress					
C	Early identification of signs and symptoms of heat stress					
D	Timely referral of heat stress cases					
E	Ability to organize emergency services to deal with heat stress cases					
F	Reporting skills					

2. Do you feel qualified to handle your current scope of work with regard to management of heat stress cases?

3. If not, what are the topics/subjects in which you need to improve your knowledge/skills to manage heat stress cases (multiple responses possible)?

- a) Awareness about heat stress
- b) Problems associated with heat stress
- c) Prevention and management of heat stress
- d) Treatment of heat stress
- e) Communication of Information, behavior change
- f) Heat stress bias
- g) Current level of expertise to deal with heat stress
- h) Technical adaptability of health unit to deal with heat stress
- i) Operational support by the government to tackle heat stress
- j) Inter-agency coordination among health service providers

4. Are you given enough mentoring to undertake successful management of heat stress?
  - a) Yes
  - b) No
  
5. How often do you consult an external source (colleague/internet/book etc.) to handle your work?
  - a) Very often
  - b) Sometimes
  - c) Rarely
  
6. Do you feel more training is needed to deal with heat stress cases in the hospital?
  - a. Yes
  - b. No
  
7. Would you attend training workshops conducted on this topic?
  - a. Yes
  - b. No
  
8. How long would like the training workshop should last?
  - a. One day
  - b. Two days
  - c. Three days
  
9. Are there any other specific skills that you would like to learn?
  - a. Yes
  - b. No

10. If yes, please elaborate-----  
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## Annexure-4: List of Workshop Participants

**List of Workshop Participants**

<b>SL NO</b>	<b>NAME OF THE PARTICIPANT</b>	<b>DESIGNATION</b>	<b>ADDRESS</b>
1	Dr. Amita Patel	MO	PHC(N) Raiboga, Sundergarh
2	Dr. Anuja Tripathy,	LTRMO	Capital Hospital, BBSR
3	Dr. Arun Kumar Sahoo	MO	Nayabazar UPHC, Cuttack
4	Dr. Bhabagrahi Sahoo	Asst. Surg.	CHC Khajuripada, Kandhamal
5	Dr. Bikram Sahoo	MO	PHC(N) Kasarda, Niali, Cuttack
6	Dr. Binaya Kumar Sahoo	Casualty MO	MKCGMCH, Berhmapur
7	Dr. Devabrata Dixit	Asst. Surg.	CHC Joda, Keonjhar
8	Dr. Girish Chandra Pati	ADPHO(TB)	DTC, CDM&PHO, DHH Balasore
9	Dr. Jogamaya Mallick	Asst. Surg.	Sergarh PHC under Remuna CHC, Balasore
10	Dr. Jyoti Prakash Sahoo,	BPHO	CHC Tangi, Cuttack
11	Dr. Krishna Chandra Pal	Sr. MO	SDH Titilagarh, Balangir
12	Dr. Kushal Chandra Hansdah	Consultant Radiology	DHH Deogarh
13	Dr. Manjurani Singh	GDMO	DHH Subarnapur
14	Dr. Narendra Kumar Murmu,	MO	Tiring CHC, Mayurbhanj
15	Dr. Neelam Mohanty	Asst. Surg.	BMC Hospital
16	Dr. Prabhu Prasad Panda	MO	CHC Boriguma, Koraput
17	Dr. Pradeep Kumar Rath,	GDMO	Capital Hospital, Bhubneswar
18	Dr. Pranav Kumar Sukla	Asst. Surg.	CHC Rajngar, Kendrapada
19	Dr. Prasanta Kumar Samal	Asst. Surg.	CHC Kundra, Koraput
20	Dr. Preetam Kumar Rath,	Asst. Surg.	CHC Salania, Keonjhar
21	Dr. Priyaranjan Sahoo	MO	PHC(N) Golchhapada, Kandhamal
22	Dr. Pushpalata Mohapatra,	MO	CHC Dompada, Cuttack
23	Dr. Rama Chandra Kisku	Asst. Surg.	CHC Remuna, Balasore
24	Dr. Rekha Bhagat	BPHO	CHC Mahidharpada, Cuttack

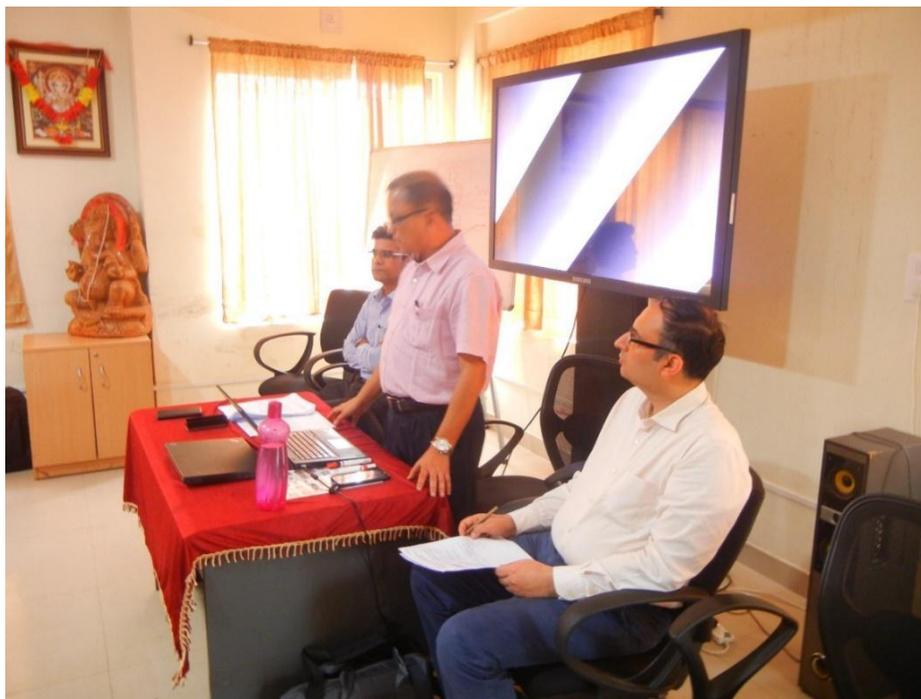
25	Dr. Santosh Kumar Behera,	Sr. MO	DHH, Jagatsinghpur
26	Dr. Santosh Kumar Sarangi,	MO	CHC Kudumuluguma, Malkangiri
27	Dr. Sephali Mallik	Asst. Surg.	UPHC Bramheswarpatna Dysp, BMC Hosp.

Annexure-5: Photo Gallery

***Photo 1 - Inaugural remarks by Dr. Dinabandhu Sahoo***



***Photo 2 - Inaugural remarks by Dr. Dinabandhu Sahoo***



***Photo 3 - Participants with the speakers at IIPHB***



***Photo 4 - Ongoing workshop on Heat Stress Management at IIPHB***



