Summer Internship

At

State Health Resource Centre (Chhattisgarh)

(March 1 to May 31st, 2021)

A Report

By

ANIMESH PRASAD PANDA

Post-graduate Diploma in Hospital and Health Management

2019-2021

International Institute of Health Management Research, New Delhi

STATE HEALTH RESOURCE CENTRE

MOHFW (CHHATTISGARH)

A Synopsis On

ASSESSMENT OF PUBLIC HEALTH FACILITY IN ASSOCIATION WITH CLIMATE VULNERABILITY IN RAIPUR & KORBA DISTRICT OF CHHATTISGARH

STATE HEALTH RESOURCE CENTRE

MINISTRY OF HEALTH AND FAMILY WELFARE (CHHATTISGARH)

Submitted in partial fulfilment for the degree of PGDHM

GUIDED BY

PUNITA KUMAR

SUBMITTED BY

ANIMESH PRASAD PANDA

PGDHM 6th Semester

(Post-Graduation Diploma in Health Management)

ACKNOWLEDGEMENT

I would like to express my sincere gratitude towards distinguished personnel for allowing me to do my summer internship under your guidance. I would take this opportunity sincere thanks to Dr. Samair Garg Executive Director of State Health Resource Center for assigning me to this project. I extend my gratitude to Narayan Tripathi for their support.

I owe my great debt of reverence & admiration to **Punita Kumar** Program Associate & Environmentalist for Climate Change and Human Health for their guidance and support without which I wouldn't be able to complete my summer internship.

I would also like to give a vote of thanks to **Dr. Sutapa B Neogi** for giving me valuable information and constant supervision.

Last but not least I would like to thanks my friends and family members without whom I would not be able to do this project.

Date: 31st May 2021

Place: Raipur, Chhattisgarh **Animesh Prasad Panda**

(Completion of Summer Internship from State Health Resource Centre)

DECLARATION

I Animesh Prasad Panda hereby declare that this Internship assignment entitled Assessment of Public Health Facility in Association with Climate Vulnerability in Raipur & Korba District of Chhattisgarh is the outcome of study undertaken by SHRC under the guidance of Punita Kumar (Program Associate: Climate Change and Human Health). It has not previously formed the basis for the award of any degree, diploma, or certificate of this Institute or of any other institute or university. I have duly acknowledged all the sources used by me in the preparation of this field internship report.

Date: 31/MAY/2021

Sign:

Postgraduate Diploma in Hospital and Health Management

International Institute of Health Management Research

New Delhi

CERTIFICATE OF COMPLETION

The certificate is awarded to

Name **ANIMESH PRASAD PANDA (ENROLLMENT NO.) (**PG/19/013])

In recognition of having completed her/ his internship in the department of

Title- STATE HEALTH RESOURCE CENTRE (CHHATTISGARH)

and has completed her/his Project on Assessment of Public Health Facility in Association with Climate Vulnerability in Raipur & Korba District of Chhattisgarh

Date- 30/MAY/2021

Organization STATE HEALTH RESOURCE CENTRE (CHHATTISGARH)

She/ He is a committed, sincere and diligent student who has a strong drive & zeal for learning.

We wish him/her all the best for future endeavors

Dean- Academics & Student Affairs

DR. PRADEEP PANDA

Mentor Name & Signature

DR. SUTAPA B NEOGI

Certificate of Approval

The following Summer Internship Project titled **"**Assessment of Public Health Facility in Association with Climate Vulnerability in Raipur & Korba District of Chhattisgarh**"** at **"STATE HEALTH RESOURCE CENTRE (CHHATTISGARH)"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned does not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

Name of the Mentor – DR SUTAPA B NEOGI

Designation – DIRECTOR / IIHMR, Delhi

FEEDBACK FORM

Name of the Student: ANIMESH PRASAD PANDA

Summer Internship Institution: STATE HEALTH RESOURCE CENTER (CHHATTISGARH)

Area of Summer Internship: Climate Change and Human Health

Attendance: Ninety days

Objectives met: Public health facility Assessment for Health infrastructure in Association with Climate Vulnerability

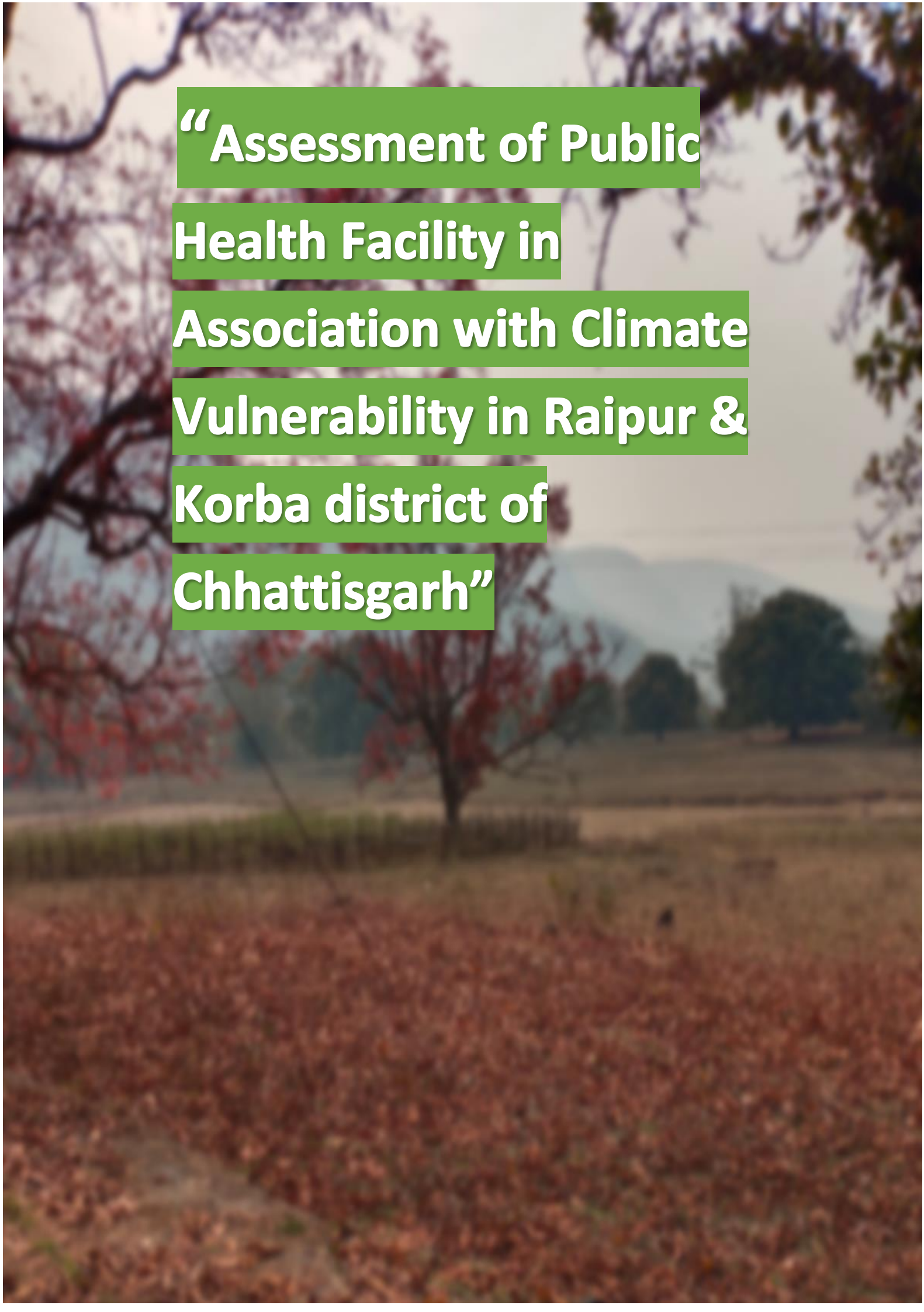
Deliverables: finding of research

Strengths: State Health Resource Centre is part of the health ministry and respondents are also aware of the organization so it becomes relaxed for us to collect data and kobo collect a mobile application make it easier to gather and store data

limitation – Time constraint and state-wise lockdown make it more challenging for the team to work together

Suggestions for Improvement:

Signature of the Officer-in-Charge (Internship)



“Assessment of Public Health Facility in Association with Climate Vulnerability in Raipur & Korba district of Chhattisgarh”

TABLE OF CONTENT

ABBREVIATION

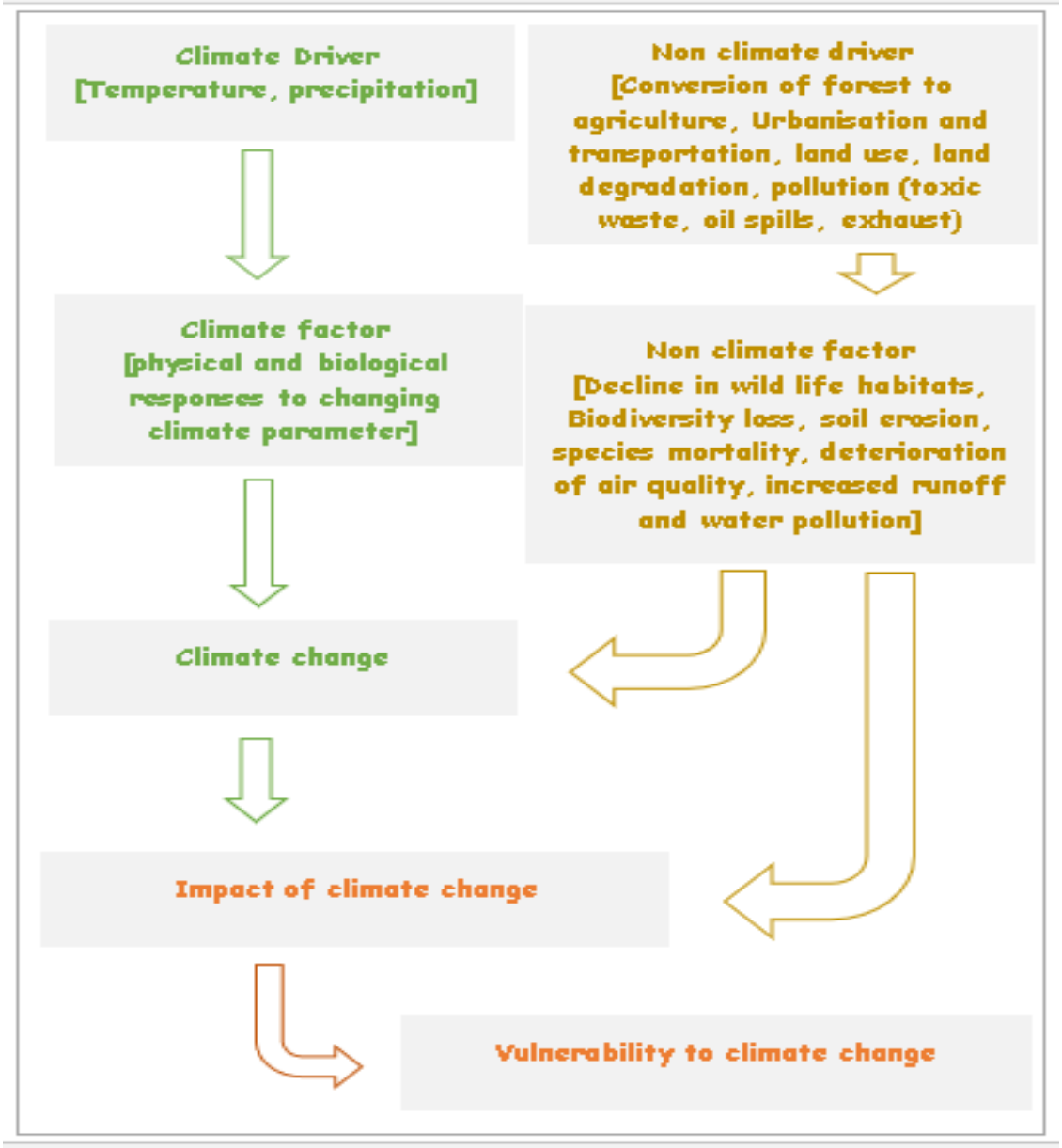
ANM –	Auxiliary Nursing Midwives
AMO-	Ayurvedic Medical Officer
BMO-	Block Medical Officer
CG-	Chhattisgarh
CHC-	Community Health Centre
DH-	District Hospital
Distt-	District
Govt -	Government
GSDP -	Gross State Domestic Product
Hec-	Hectare
KOBO collect –	Android Based application to collect the data
MO-	Medical Officer
MOHFW-	Ministry of Health and Family Welfare
mm-	Millimetres
PHC-	Primary Health Centre
RMA-	Registered Medical Assistant
SHRC –	State Health Resource Centre
STATA-	Statistical Software

1. INTRODUCTION

The world is seeing rapid change in climate from past few decades, some of which is inevitable and some of which is caused by humans also called as manmade. Temperature rising, increasing in sea level, melting of glaciers, industrial accident, breaches in dams etc and these changes is average until it susceptible to the change, else its became a vulnerability. These vulnerabilities may include disaster prone areas, where a society, infrastructure, area or ultimately the health of people might be at risk.

These vulnerabilities can fall into five categories; climatic related, biological disasters, geological related, accident related and chemical and nuclear or industrial related disasters. The terms VULNERABILITY and RISK are often used to describe the potential (adverse) effects of changing climate on infrastructure, economic sectors, communities and regions. The degree to which a system is vulnerable to, and unable to cope with, the adverse effect of climate change, such as climatic variations and human activities, is referred to as climate vulnerability. Vulnerability is determined by the kind, amount, and pace of climatic change and variation to which a system is EXPOSED, as well as its sensitivity and adaptive capacity.

Climatic Related	Geologic Related	Accident Related
• Flood • Drought • Cyclone • Cloud Burst • Hot and Cold Waves • Storm and Lightning	• Earthquake • Landslide • Dam burst • Fire in Mines	• Fire • Explosion • Air, Road & rail Accident • Flooding in Mines • Building Collapses
Biological Disaster	**Chemical, industrial and nuclear related Flood**	
• Epidemic • Pest Attack • Animal Epidemic	• Chemical & Industrial Disasters and Nuclear Disasters	



1.i. RATIONAL

According to the Department of Science and Technology's [DST] climate vulnerability assessment study, Chhattisgarh comes under high vulnerability states on ranks 4th. Where the state has a long history of natural catastrophes and epidemics. The study focuses on two districts of Chhattisgarh, Raipur and Korba. Raipur is the state capital and an industrial centre, whereas Korba is a thermal power and coal mine hub. Many studies have shown the adverse effect during a calamity. One such study demonstrates the health risk and complications on health facilities & health services during the 2015 Chennai flood. The study shows the challenges that the health sector faces, as well as the unpreparedness of healthcare facilities. This study will concentrate on finding the gaps in

health facilities and their infrastructure in order to comprehend the resilience of health facilities in the context of climate vulnerability.

1.ii. OBJECTIVE

1. To understand the likelihood of climate vulnerability and its impact on public health facility
2. To identify the gaps of public health facility Infrastructure related to climate vulnerability
3. To identify the preparedness of Health Facility for Climate Vulnerability

2. LITERATURE REVIEW

The world's climate is changing. These changes are posing new health hazards to individuals all across the world. Extreme weather, poor air quality, and disease outbreaks are becoming more often and severe, wreaking havoc on more areas. Because of climate change, our communities must prepare for the health effects of increased temperatures. As average temperatures rise throughout the world, air quality changes, potentially triggering asthma and allergies. Hotter temperatures and altering weather patterns may worsen air pollution by increasing the density of harmful particles in the air, as may more frequent droughts, which can lead to wildfires that release hazardous pollutants into the air. Children, those with asthma and respiratory difficulties, the elderly, and those with weakened immune systems are more vulnerable. Heat stroke, heat exhaustion, dehydration, and death can all result from extreme heat, while certain people are more sensitive than others, including pregnant women, persons with chronic lung problems, sports, and outdoor workers or labourers.

More frequent and severe storms and floods are also a result of climate change, placing people at danger of being injured or killed by fallen electrical lines in the event of a catastrophic storm or flood. Contaminated food or drinking water with bacterial viruses and hazardous chemicals in floodwaters, as well as issues getting health care services such as emergency medical aid and supplemental oxygen, are all potential health risks. In these instances, older individuals with impairments and low-income families are particularly at danger. If they can't flee, they may have a harder difficulty fleeing a storm and incur more health risks. People who are forced to leave in situations like this are more prone to anxiety and despair, even if they have no history of mental illness.

2.i. CLIMATE OF CHHATTISGARH

Chhattisgarh is known as the Rice Bowl of Central India since agriculture, power, and industry contribute the most to the state's GSDP. The state is characterised by a tropical climate. The climate of Chhattisgarh is influenced by geographical variables such as the state's distance from the sea and altitude. Chhattisgarh's climate is primarily tropical, humid, and sub-humid. The climate is hot due to its location in the Cancer Tropic. May is the warmest month, while December and January are the coldest. The weather is scorching in the summer, with gusts of dry wind sweeping through the state. The

temperature drops to some extent throughout the winter. The months of November to March are generally pleasant across the state, with the exception of a few brief spells in the winter months when strong cold waves connected with western disturbances strike northern sections of the state. The months of April and May are hot, dry, and generally unpleasant. In summer, however, some portions of the plateau and Northern Hills regions are considerably less uncomfortable due to lower temperatures. Due to the extreme high temperature and humidity in June, the weather can be unpleasant. The next three months (July, August, and September) will be rather pleasant thanks to lower dry temperatures; however, humidity will remain high. Over the northern hilly parts and nearby plains (Korea, Surajpur, Balrampur, and Sarguja districts), the climate varies from subtropical monsoon, moderate and dry winters, to hot summers.

2.ii. DISASTERS PRONE TO KORBA

- Floods- Due to heavy rains in the Northern Korba and Korea districts, the gates of Bango Dam and Hasdeo Barrage are frequently opened, creating minor floods in low-lying areas.

- Drought- Korba district is also prone to drought because the main crop is paddy, which is heavily reliant on rainfall. The district's average rainfall is around 1506.7mm. The total area under primarily crop is around 134494 hec, with paddy accounting for about 109622 hec. In the district, just 8.5 percent of the land is irrigated. Of some regions, there is a significant decline in water throughout the summer season. The monsoon season begins in the middle of June. Though the

Korba area has never experienced a drought, changing climatic circumstances (global warming) and a decline in the ground water table may cause drought and shortage in the future.

- Epidemics – There hasn't been any major epidemics in the district in the past. The topography of this district is such that many parts are still inaccessible and deemed sensible or risky from a hazard standpoint.
- Earthquakes – Although Korba is located in seismic zone 2, the district's underground mines have made it more sensitive to earthquakes.

- Industry accident: Korba have high influence of industries due to rich in coal. Fall of the Chimni of Balco Industries in the year 2008, was one of the deadliest accidents in the history.
- Forest fire – Blocks from the district like podi uproar, Kartala and Paali are full of villages and hilly rural that's makes forest fire common in korba.

2.iii. DISASTERS PRONE TO RAIPUR

- **Drought:** Drought 2017-18 causes in 96 tahasils of 21 district and affect 958411 farmers. Where Raipur contributed 22 tahasil.
- **Heatwaves:** During the summer, the maximum temperature frequently exceeds 45 degrees Celsius, resulting in severe heat waves. Many individuals are killed as a result of this, including the homeless, gardeners, everyday wanderers who work in direct sunlight, vehicle drivers, and others. Increased risk of heatwaves as average temperatures climbs over time. Regions with existing high average temperatures or regions where temperature thresholds may be surpassed, as well as metropolitan centres where the Urban Heat Island effect would exacerbate high temperatures, may be more exposed.
- **Rainfall** – Raipur have a average rainfall of 1000-1300nm.
- **Flood:** Raipue, Arang, abhanpur, Tilda Tahasil from district are listed in highly effected due to flow of Kharun river, Mahanadi river.
- **Urban Flood:** Rapid urbanization has increased the concern of urban flood. In urban area, mostly water drainage failure, natural drainage channels, urban lakes, storm water drains contribute towards the flood. Apart from this, there is an outbreak of epidemic due to flood water and absence of sewerage management.

Raipur, Dhamtari, Durg, Rajnandgaon, Bilaspur, Mungeli, Janjgir Champa, Raigarh, Bastar are influenced by urban flood.

- **Lightning:** This is a natural disaster, in the context of Chhattisgarh state, most of the lightning incidents occur in monsoon season, apart from this, due to sudden changes in weather, the possibility of lightning also arises. As a result, there is huge loss of animal as well as public money takes place at large scale. Adverse effects of lightning are seen in Korba, Raigarh, Mahasamund, Bastar districts. Between 2011-2015, 1058 people died due to lightning in the state.
- **Epidemics:** Although Chhattisgarh has history of outbreaks like cholera, hepatitis in past. The state of Chhattisgarh is particularly prone to acute diarrheaic, infectious hepatitis, Japanese fever, poliomyelitis, typhoid, malaria, H1N1 etc.
- **Industrial Accidents:** In Chhattisgarh, many industrial accidents have been occurred so far, Including the fall of the Chimni of Balco Industries in the year 2008, the event of a fire in the Bhilai Steel Plant, 2019.

3. METHODOLOGY

2.i. STUDY DESIGN

The research carried out on a cross-sectional design.

2.ii. STUDY SAMPLE

The assessment was consider in the district of Raipur and Korba, due to Climate Vulnerability of those two districts of Chhattisgarh. One is a capital, and industrial area, while korba being the hub of thermal plants and mines.

List of all public health facility of both districts taken from cghealth.nic.in where, all the tertiary care and community health centre are covered, and a random sampling between 79 Primary Health Centre and 22 Urban Primary Health Centre were taken.

Health Facility		
Types of Health Facility	Freq.	Percent
CHC	11	19.64
District Hospital	2	3.57
Medical College and Hospital	1	1.79
PHC	42	75

2.iii. DATA COLLECTION

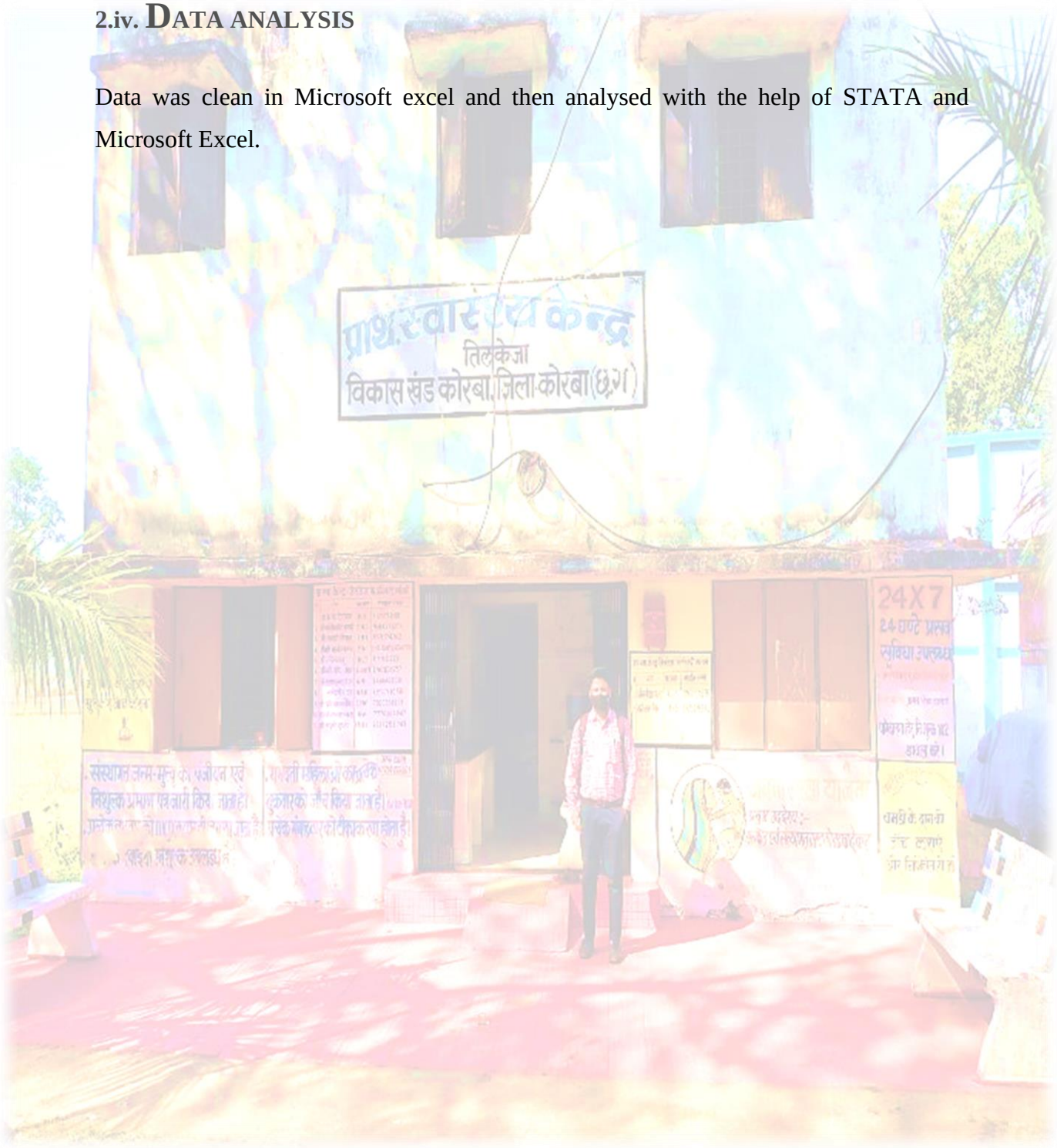
- The questionnaire was design with the help of a guidance document "Protecting Health from Climate Change: Vulnerability and Adaptation Assessment" from WHO and filled by medical officer or any Medical In-Charge or Nursing In-Charge of the public health facilities.
- Data filled with the help of the software "KoBoCollect" a android based

application and primary data draw from the application in xls format. Then the data is cleaned using Microsoft Excel.

- The secondary data was collected using various research, news articles, govt reports and the onsite field report during the health facility visits and in-depth interviews.
- The study carried out in 3 months starting from March 2021 to MAY 2021.

2.iv. DATA ANALYSIS

Data was clean in Microsoft excel and then analysed with the help of STATA and Microsoft Excel.



4. RESULT

4.i. DEMOGRAPHY PROFILE OF THE STUDY

	Freq.	Percent
Total Health Facility		
CHC	11	19.64
District Hospital	2	3.57
Medical College and Hospital	1	1.79
PHC	42	75
Designation of the Respondents		
Administrator	2	3.57
BMO	4	7.14
MO	11	19.64
Medical Superintendent	3	5.36
Nursing Supervisor	3	5.36
RMA/ANM/Bsc. Nursetion	33	58.93

TABLE – 1

Ambulance Service Available				
	PHC	CHC	DH	MEDICAL COLLEGE
Not Available	37			
102	5	11	2	1
108	3	11	2	1
108	0	11	2	1

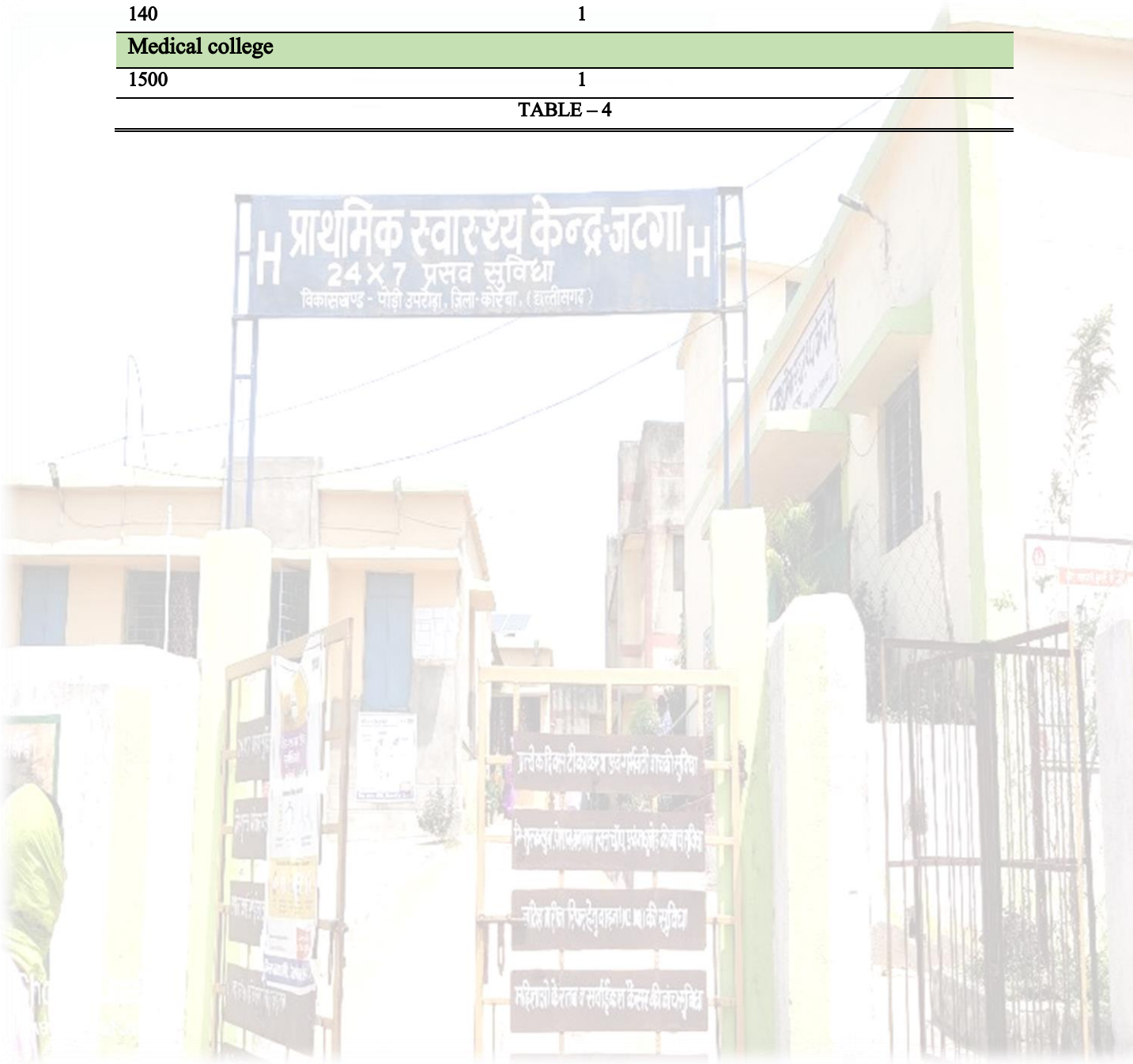
TABLE – 2

	Avg	Min	Max
Number of villages covered			
PHC	17	1	55
CHC	141	40	300
Number of populations covered			
PHC	54677	9500	790149
CHC	281281	30000	770000
Number of staff at the health facility			
PHC	13	4	32
CHC	41	24	59
DH	300	…..	…..
Medical college	1500	…..	…..

TABLE – 3

Number of Beds Available at the Health Centre	
PHC	
>6	16
6-10	23
<10	2
CHC	
>30	1
30-50	10
DH	
120	1
140	1
Medical college	
1500	1

TABLE – 4



4.ii. LIKELIHOOD AND PAST RECORDS

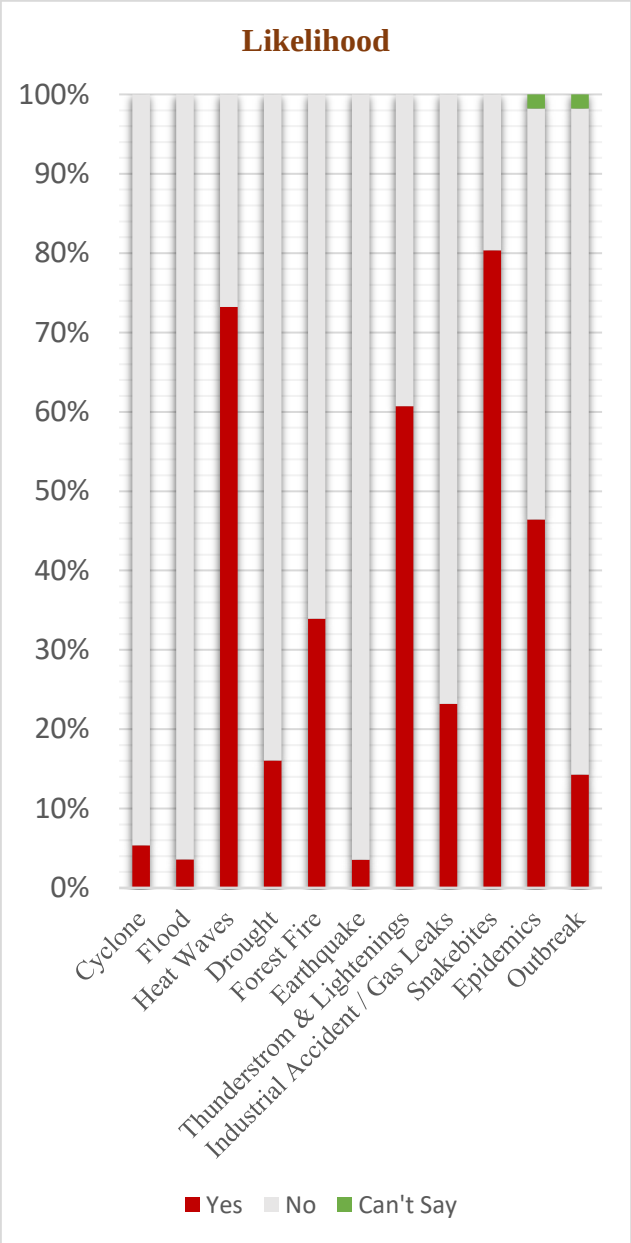


Figure - 1

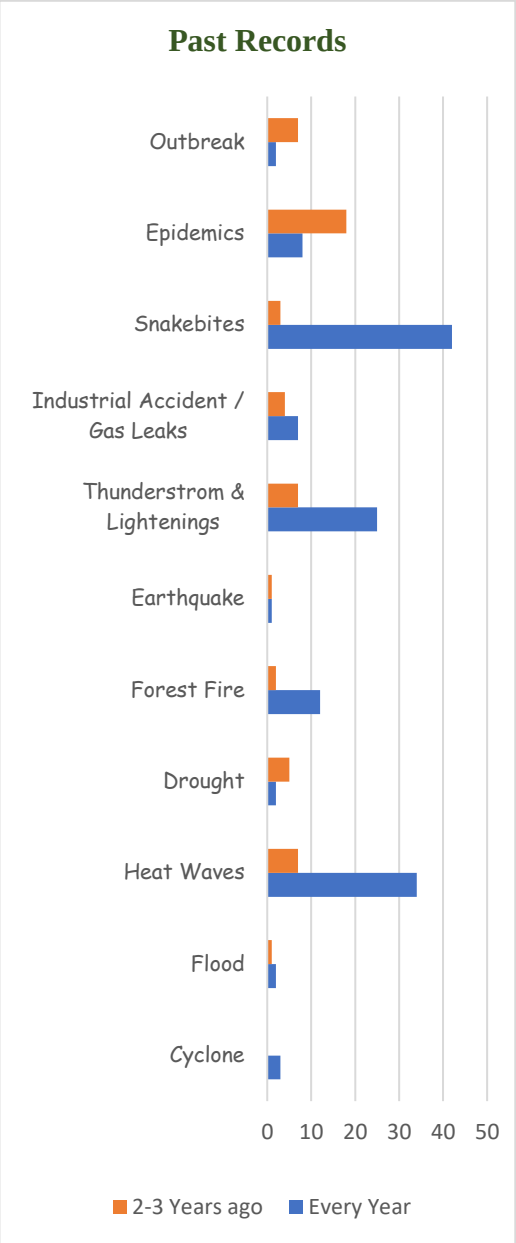


Figure - 2

Snakebites, heat waves, and thunderstorms and lightning have been found to be highly influenced climatic vulnerabilities to both districts, with a history of recurring almost every year. [Figures 1 & 2] While cyclones, floods, and earthquakes provide the least harm and have little historical precedent [Figure – 2]. Epidemic can be a concern. During the visit, we observed that an epidemic had affected several communities over 2 – 3 years ago, with many of them suffering from diarrhoea. Outbreaks in a village or parts of a district account for the majority of these epidemics in both districts. Many incidences of forest fires have been reported in rural areas, areas bordered by jungles, or areas with

more farmed land than inhabited land. While forest fires are generally reported from rural areas, industrial accidents and gas leaks are were here from cities or surrounding regions to cities, where several health centres say that many incidents go unreported. Aside from these, drought posed a minor hazard to the districts. [Figure 1]. All of these calamities affect the districts, although the odds of injury or death to either patients or staff are lower in the hospital's surroundings. As per the data, only four and five health centres, mostly CHCs and District Hospitals, posed some risk of injury or death.[Figure – 3 & 4].

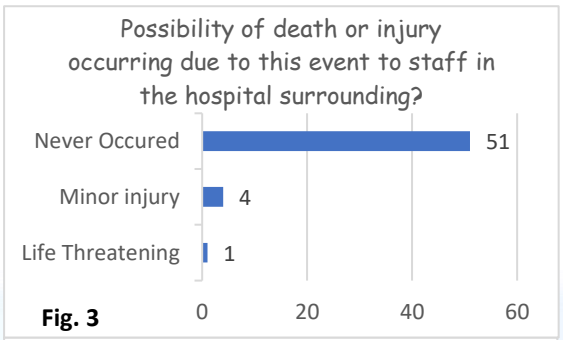


Fig. 3

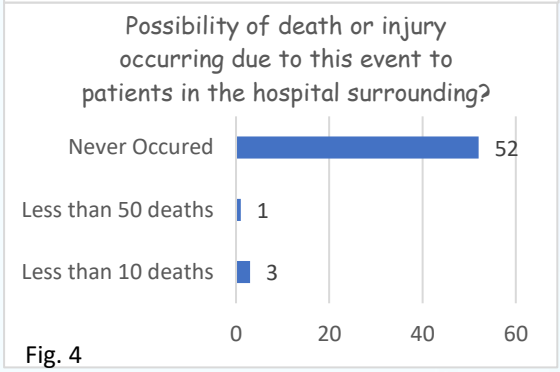


Fig. 4

4.iii. DAMAGES DUE TO THE EVENTS

It has been observed that some health facilities have received damages in the event of catastrophes in the past, with building infrastructure having a higher percentage of receiving damages as a result of these catastrophes. Other damages, such as solar panels and medical equipment, have also harmed some facilities.

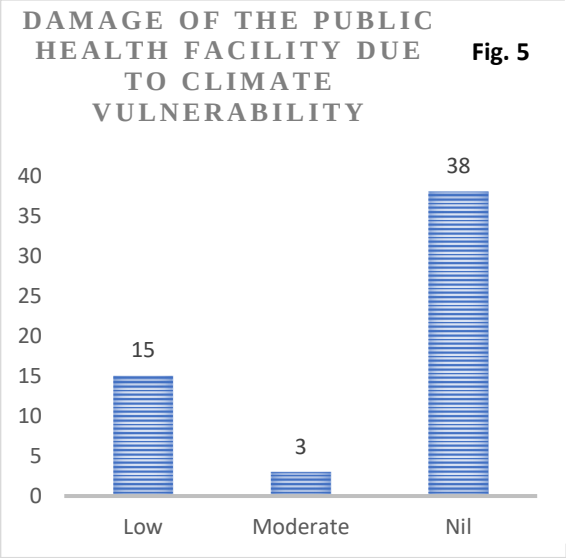


Fig. 5

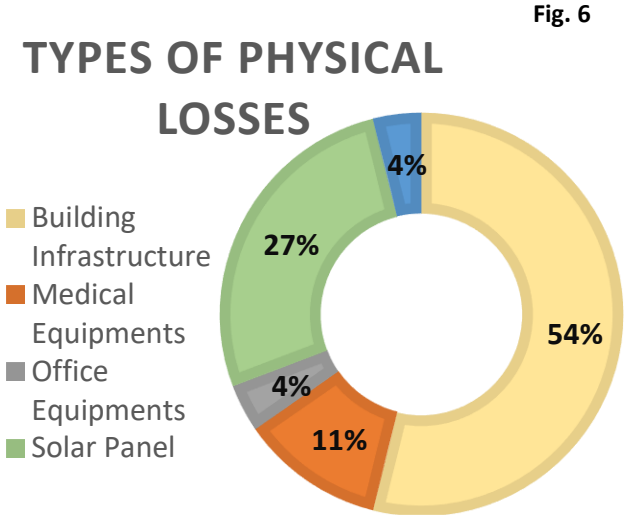


Fig. 6

4.iv. INTURRUPTION TO SERVICES

Electricity and water supply mostly affected whenever the disaster like situation came to the area. Essential services like health services and supply to medicine, patient or employee unable to reach to the hospital were less impacted during a disaster, excepts for few health centres.

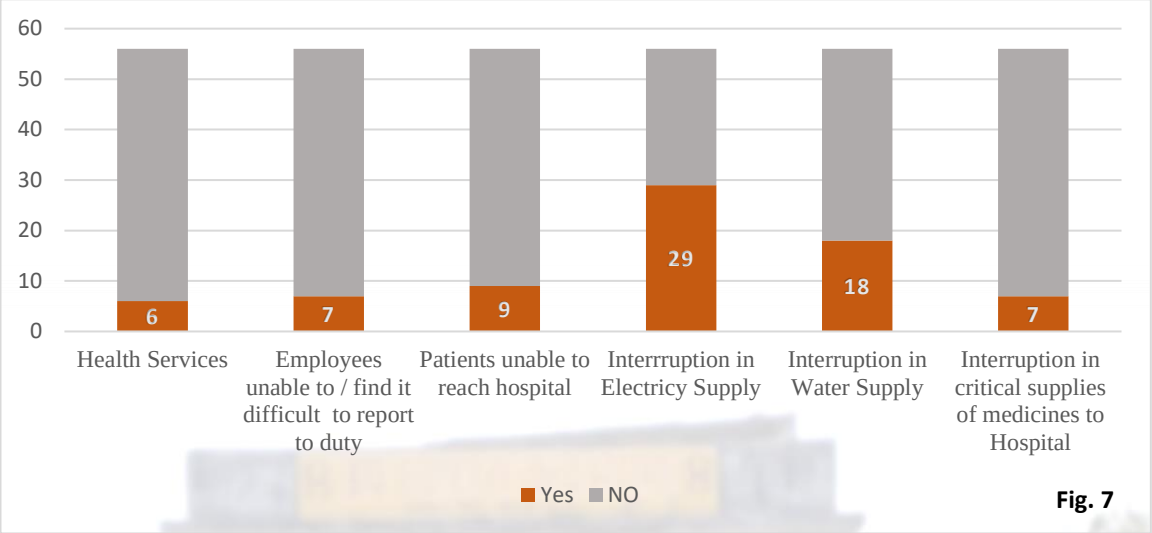


Fig. 7

4.v. PREPAREDNESS IN RESPONSE TO SUCH EVENTS

Many health centres lack a proper disaster management plan in terms of preparedness [Figure 8]. Furthermore, many received no official training or seminars from any of the agencies. [Figures 9 and 10] Few public health centres with active plans are found mainly at CHCs, District Hospitals, and Medical College. The data shows Only 9% of all facilities have a successful evacuation or emergency health reach history, however all institutions are likely to be vulnerable to any potential emergencies [Fig 12]. Fortunately,

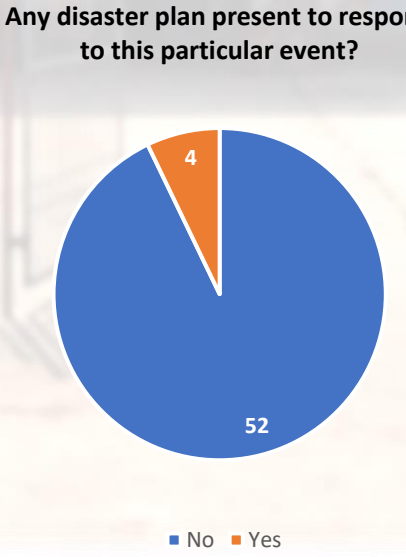


Fig. 8

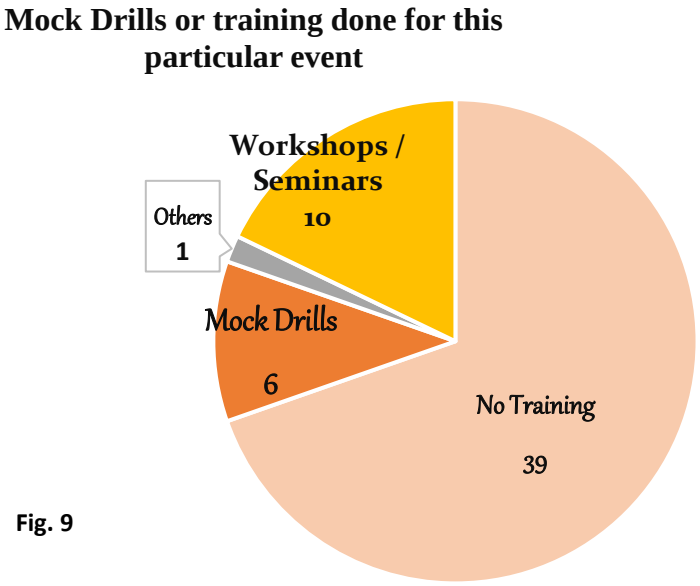


Fig. 9

in such crises, the response team can successfully cover almost every health centre. Few health centres, the most of which are in remote areas or are far from the district hospital, have a receiving response team ready within 5 to 24 hours [Fig. 11]. This might be due to the road's condition as well, as several facilities state. On such situations, the majority of PHCs rely on response teams from district hospitals and medical colleges. Except for a few facilities, most infrastructures are well-prepared in terms of personnel, backup systems, and supply stock [Fig. 13]. Around 60% of facilities have also found that they have a cooperation with local suppliers and nearby health facilities. Besides these, PHCs coordinate with their CHCs and DHs, mostly for the referral of critical patients [Figure 13].

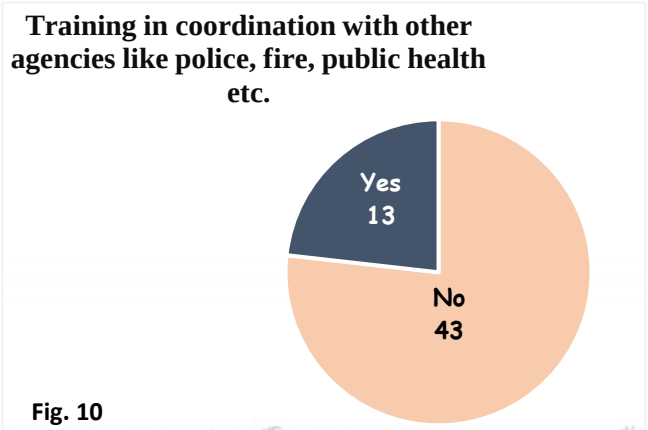


Fig. 10

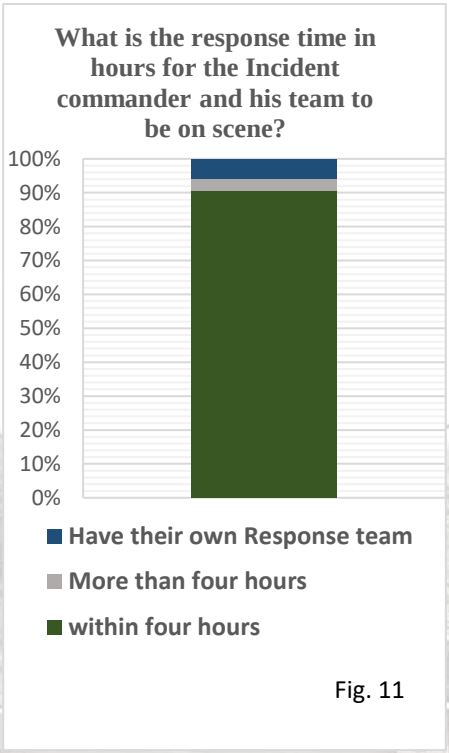


Fig. 11

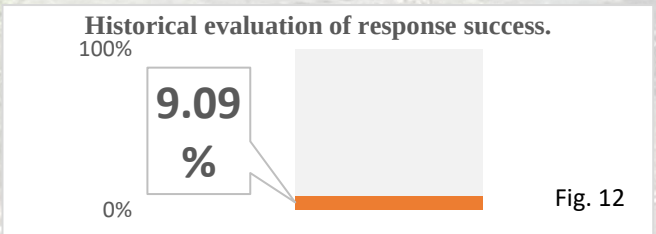


Fig. 12

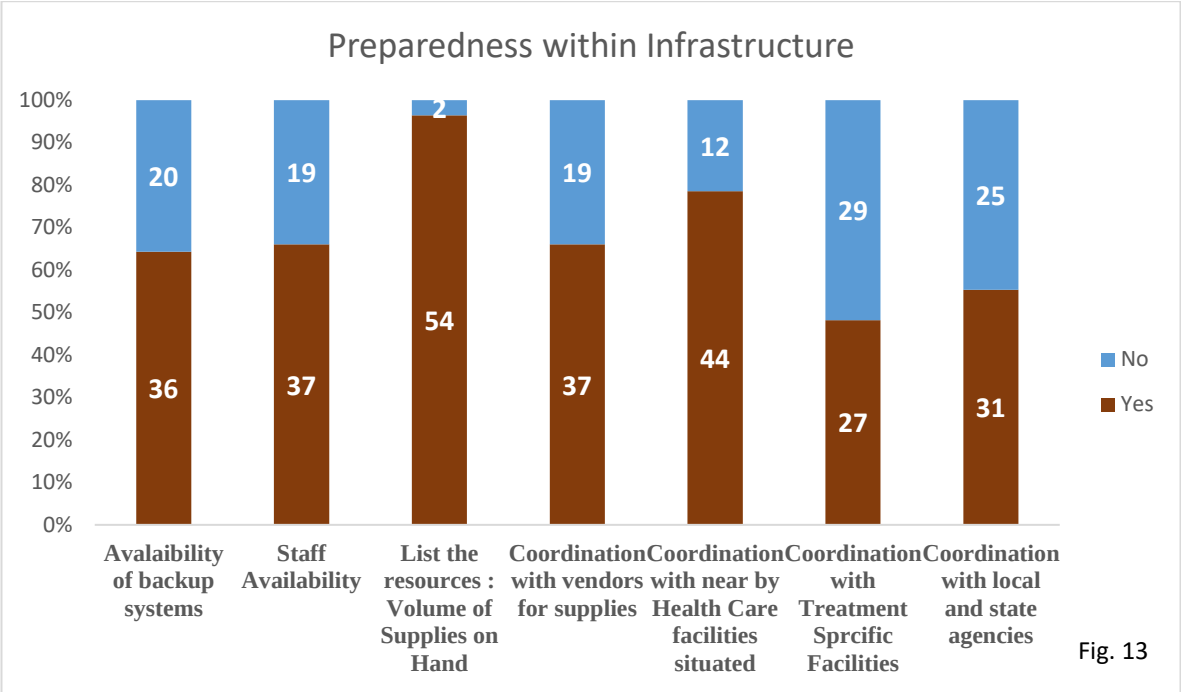
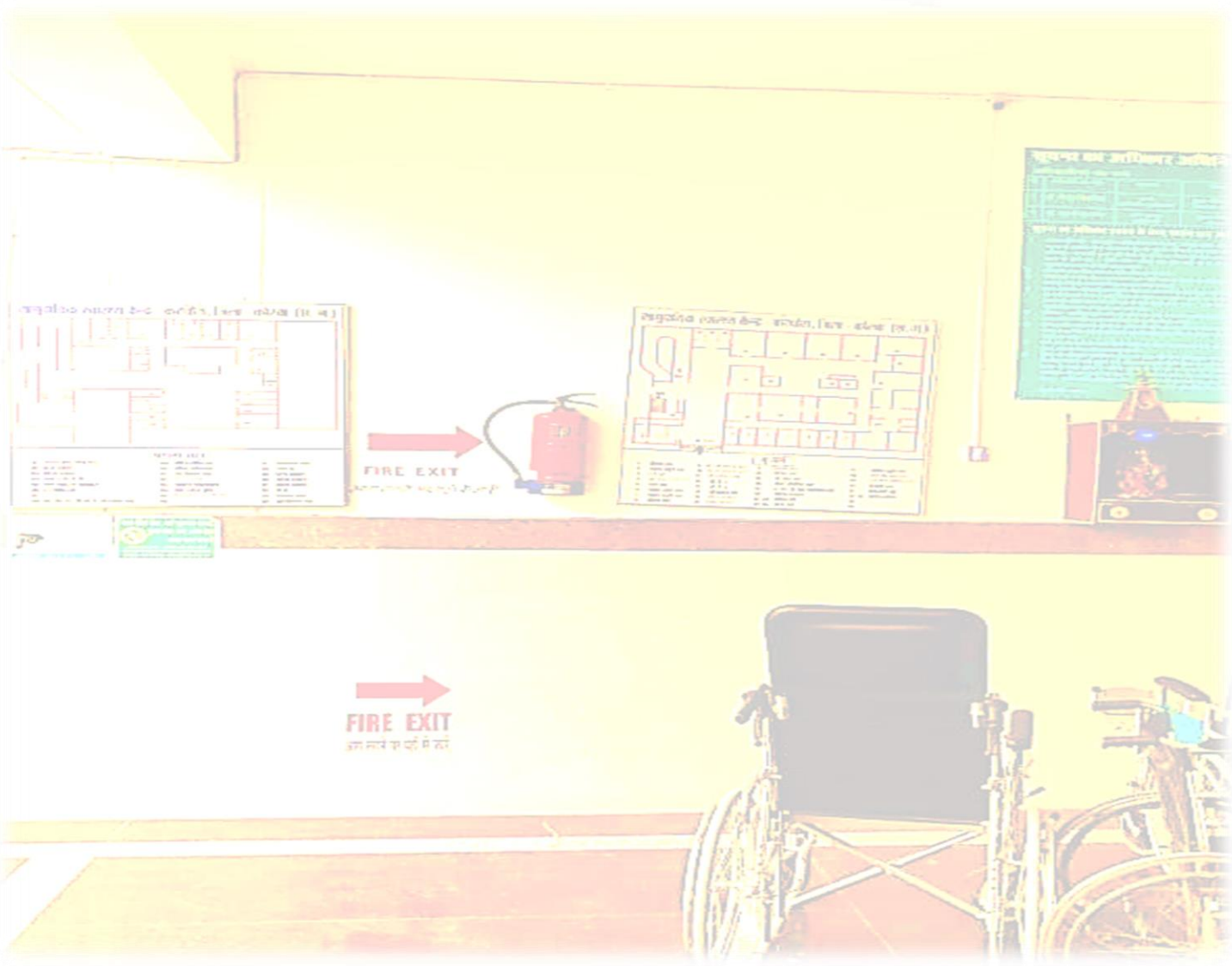

Preparedness within Infrastructure
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
20
36
19
37
2
54
19
37
12
44
29
27
25
31
No
Yes
Avalaibility of backup systems
Staff Availability
List the resources : Volume of Supplies on Hand
Coordination with vendors for supplies
Coordination with near by Health Care facilities situated
Coordination with Treatment Sprcific Facilities
Coordination with local and state agencies

Fig. 13


FIRE EXIT
FIRE EXIT

5. DISCUSSION

Many health centres had reported a rise in heatwave cases. This signifies a shift in the heat pattern. Rising temperatures and heatwaves are major concerns for the homeless, gardeners, everyday wanderers who labour in the sunlight, car drivers, and others, and can result in death. These changes are likely to have an impact on agriculture and may be connected to snakebites and other animal attacks [Fig. 2]. Reptiles, such as snakes, often prefer to live in wetlands; however, increasing heat or recent drought, or anything else that can cause a reduction in wetlands, can cause such animals to migrate to human areas in search of wetlands, such as mud in the backyard or garden, near water tanks, toilets, kitchen water disposal points, etc. However, additional study is needed to determine the relationship between climate change and this. During the visits, it was observed that in Korba and Raipur, most PHCs are operated by RMAs, and most snake bite incidents were often referred to CHCs and District hospitals because RMAs are not confident in using (ASV) Anti snake venom, since it is not part of their curriculum, and they require training in how to administer them.

Thunderstorms and lightning, which have been the third most likely vulnerability [Fig-1], have interrupted electricity and health services in certain health centres. Due to the heavy thunderstorm, one of the PHCs, PHC, Chakabuda, was severely damaged by a shattered wall and a collapsed roof. According to the PHC In-Charge, the roof of the operating theatre collapses during a delivery. Thus, cases cause extra maintenance costs for the health centre and can be life-threatening to patients and healthcare workers. Economically, the damage to a building infrastructure costs the administration more money in such calamities. In addition, interruptions in health service due to such circumstances exempt the health facility's objectives. Where they depend completely on referral to higher centres rather than handling on their own.

Areas with middle of the jungle are primarily used for the cultivation of regional plants, and the majority of people there earn a living via farming. As per observations, the majority of forest fires recorded originate in areas remote from urban areas. Several observations were made while conducting research, forest fires the majority of which were due to human activity. Plant cultivation Mahuwa, a native plant, is often used to make a local alcoholic drink or wine, among many other things. During the summer, dried

leaves on the ground cover the fruits and flowers of mahuwa plants, which would then be burned by the locals to acquire the fresh fruit and flowers. In these areas, it is usual to see smoke from the forest on summer days. These fires may spread and endanger people's lives, destroy crops, and financially hurt farmers. However, no evidence can be found to support this; it can only be a cause of a forest fire.

Within a 30-40 km radius of city Korba which is also an industrial area with more than 5 thermal power plants and major infrastructure related to coal mines. In certain areas, the likelihood of an industrial accident is considerable. Minor incidents, such as machine-induced mishaps or a follow-up for serious injuries treated in other hospitals are frequently reported at public health institutions nearby those regions. Many thermal power plants and other sectors provide healthcare to their employees, and as a result, many incidents go unreported, making it difficult to determine how many industrial injuries happened in this area.

Earthquake is the least likely threat to the districts, but public health facilities in industrial regions, Bhilai Bazar, and Chhuri have mentioned tremor during explosive blasts in a mine, there are chances of earthquake or landslide linked to these blasts. The outbreak might be a source of concern because many diseases remain undetected in locations that are still inaccessible. In both districts, many health centres reported a diarrhoea epidemic. Around three to four years ago, it has spread to numerous communities. Aside from these cyclones, floods and droughts are less likely, excluding a few areas.

According to Fig.13, 20 to 30 % facilities are not adequately equipped within their infrastructure to respond to disasters. Some lack personnel, some lack collaboration with nearby facilities or vendors, and some are unable to keep supplies on hand. Rest may have the staff strength, cooperation, or supplies, but without a comprehensive disaster plan, as shown in fig.8, it will be challenging to withstand such calamities. Especially when a disaster is more likely to strike the building infrastructure first to disrupt the power supply [fig.7].

5.i. RECOMMENDATION

Observations made during visits indicate that PHC can be used to its full potential by prioritising PHC as the first unit to minimise health risks associated with climate vulnerability, which requires a plan, training, and development.

An emergency plan with well-trained staff to respond to the emergency; refresher training for staff on precautions and treatment like snakebites, heatwaves, burn or lightning cases, and so on. By developing infrastructure with proper wiring and lighting protection to prevent short circuits, as well as equipment and materials or supplies to be properly maintained to cope with such accidents, incidents that are referred to higher centres can be prevented. Providing fire extinguishers and other emergency supplies, as well as training and mock exercises on a yearly basis, in order to be prepared in the event of an emergency.

Regions indicating which communities or areas are more sensitive or vulnerable to a specific occurrence can be mapped using relevant IEC material, which may be distributed to health centres. This may be used to raise community awareness. Besides from the first aid and evacuation training, the community can be better prepared to respond to certain crises.

Creating a public-private partnership around with such events can be valuable. Private hospitals are more resourceful and might be an aid in responding to such disasters.

5.ii. CONCLUSION

The climate vulnerability and health facility assessment in Raipur and the Korba district will serve as a foundation of information on current conditions, forecasted impact of climate change, and the effectiveness of adaptation strategies that can be used to track progress toward climate-resilient communities and public health protection. However, due to the project's limited scope (other districts in Chhattisgarh), further study and capacity building are required to better understand the breadth of health hazards posed by climate change and the best adaptation solutions available in the state.

6. REFERENCES

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ANNEXURE – 1

Climate Vulnerability Health Facility Assessment

Name of the Facility:

_____

Type of Health Facility

- ◯ Medical College and Hospital
- ◯ District Hospital
- ◯ CHC
- ◯ PHC
- ◯ SHC

Location

_____

latitude (x.y °)

_____

longitude (x.y °)

_____

altitude (m)

_____

accuracy (m)

_____

Photo of Health Facility

Click here to upload file. (< 5MB)

Designation of the Respondent

- ◯ Administrator
- ◯ Medical Superintendent
- ◯ Medical Director
- ◯ Emergency Consultant
- ◯ CMO /CMHO
- ◯ Nursing Supervisor
- ◯ BMO
- ◯ MO
- ◯ RMA GNM/ANM / Bsc. Nursetion 9

Number of Villages covered

_____

Population Covered

_____

Number of Beds

_____

Number of staff at the health facility

_____

Does the Facility have an ambulatory service

- ☐ 102
- ☐ 104
- ☐ 108
- ☐ Not Available

Likelihood of Cyclone

- ◯ Yes
- ◯ No
- ◯ Can't say

Cyclone Last occured

- ◯ Every Year
- ◯ Last Year
- ◯ 2-3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Flood

- ◯ Yes
- ◯ No
- ◯ Can't say

Flood Last Occured

- ◯ Every Year
- ◯ Last Year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Heat Waves

- ◯ Yes
- ◯ No
- ◯ Can't say

Heat Waves Last occured

- ◯ Last year
- ◯ 2 years ago
- ◯ 3-5 years ago
- ◯ > 5 years ago
- ◯ Never Occured

Likelihood of Drought

- ◯ Yes
- ◯ No
- ◯ Can't say

Drought Last occured

- ◯ Every Year
- ◯ Last Year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of forest fire / fire

- ◯ Yes
- ◯ No

Forest fire / fire last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Earthquake

- ◯ Yes
- ◯ No
- ◯ Can't say

Earthquake Last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Thunderstorm & Lightenings

- ◯ Yes
- ◯ No
- ◯ Can't say

Thunderstorm & Lightenings Last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occuerd

Likelihood of Industrial Accidents/ Gas Leaks/Slurry leakage

- ◯ Yes
- ◯ No
- ◯ Can't say

Industrial Accidents/ Gas Leaks Last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Snakebites

- ◯ Yes
- ◯ No
- ◯ Can't say

Snakebites Last occured

- ◯ Every Year
- ◯ Last Year
- ◯ 2 - 3years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Epidemics

- ◯ Yes
- ◯ No
- ◯ Can't say

Epidemic Last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

Likelihood of Outbreak

- ◯ Yes
- ◯ No
- ◯ Can't say

Outbreak Last occured

- ◯ Every year
- ◯ Last year
- ◯ 2 - 3 years ago
- ◯ > 3 years ago
- ◯ Never Occured

What is the possibility of death or injury occurring due to this event to staff in the hospital surrounding?

- ◯ Minor injury
- ◯ Severe injury
- ◯ Life Threatening
- ◯ Never Occured

What is the possibility of death or injury occurring due to this event to patients in the hospital surrounding?

- ◯ Less than 10 deaths
- ◯ Less than 50 deaths
- ◯ Less than 100 deaths
- ◯ More than 100 deaths
- ◯ Never Occured

What is the scale of physical losses or damage to the hospital due to this event?

- ◯ Nil
- ◯ Low
- ◯ Moderate
- ◯ High

Describe the type of property damage.

- [ ] Building Infrastructure
- [ ] Office Equipment
- [ ] Lab Equipment
- [ ] Medical Equipment
- [ ] Solar Panels
- [ ] Others

Others

Health Services Interruption

- ◯ Sometimes
- ◯ Many Times
- ◯ Most of the times
- ◯ Never

Employees unable to / find it difficult to report to duty

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the time
- ◯ Never

Patients unable to reach hospital

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the tiems
- ◯ Never

Interrruption in Electricy Supply

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the times
- ◯ Never

Interruption in Water Supply

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the times
- ◯ Never

Interruption in critical supplies of medicines to Hospital

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the times
- ◯ Never

Damage to Equipment

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the times
- ◯ Never

Damage to Medicine and Vaccine Storage

- ◯ Sometimes
- ◯ Many times
- ◯ Most of the times
- ◯ Never

Any disaster plan present to respond to this particular event?

- ◯ Yes
- ◯ No

If Yes, Please provide a copy.

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Mock Drills or training done for this particular event?

- ◯ Yes
- ◯ No

Type of training

- Workshops/seminars
- Table top Exercise
- Mock Drills
- Others

How many times in a year?

- ◯ Annually
- ◯ Half Yearly
- ◯ Quarterly
- ◯ Monthly

Training in coordination with other agencies like police, fire, public health etc.?

- ◯ Yes
- ◯ No

Availability of backup systems

- ◯ Yes
- ◯ No

What is the response time in hours for the Incident commander and his team to be on scene? Hrs/Mins

_____

Has there been any historical evaluation of response success.

- ◯ Yes
- ◯ No

List the resources: Volume of Supplies on Hand

- ◯ Yes
- ◯ No

Staff availability

- ◯ Yes
- ◯ No

Coordination with vendors for supplies

- ◯ Yes
- ◯ No

Coordination with local and state agencies:

- ◯ Yes
- ◯ No

Details

_____

Coordination with near by health care facilities situated

- ◯ Yes
- ◯ No

Details

_____

Coordination with treatment specific facilities

- ◯ Yes
- ◯ No

Details

_____