SUMMER INTERNSHIP

AT

IIHMR, DELHI

(1st April- 31st May)

A REPORT

BY

DR. VANDANA BHATT

POST- GRADUATE DIPLOMA IN HOSPITAL AND HEALTH MANAGEMENT

2019-2021

ACKNOWLEDGEMENT

Foremost, I would like to express my sincere gratitude towards **my parents & faculty of IIHMR, DELHI** for their kind co-operation and encouragement which help me in completion of this project. I would like to express my special gratitude and thanks to institute persons for giving me such attention and time.

I would like to express my gratitude to my mentor **Ms. Divya Aggarwal** for the continuous support on my summer internship study and research, for her patience, motivation, enthusiasm, and immense knowledge. Her guidance helped me in all the time of research and writing of this report. I could not have imagined having a better advisor and mentor for my summer internship.

My thanks and appreciations also go to **my batch mates** in developing the project and people who have willingly helped me out with their abilities.

DECLARATION

I, **Vandana Bhatt**, hereby declare that this Internship Assignments entitled **"Summer Internship Report"**, **A. A case study on National Health Mission, Haryana, B. Child Health Program of NHM, Haryana, C. Comparative study on recent outbreaks in India, D. Research study on Prevalence of Insomnia among health professionals during COVID- 19 pandemic in Delhi,** is the outcome of my own study undertaken under the guidance of Ms. Divya Aggarwal, IIHMR- Delhi. 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: 4 July, 2020

Sign: Vandana

Postgraduate Diploma in Hospital and Health Management

International Institute of Health Management Research

New Delhi

CERTIFICATE OF COMPLETION

This is to certify that Vandana Bhatt (PG/19/098) student of Post Graduate Diploma in Hospital and Healthcare Management (PGDHM) from International Institute of Health Management Research, Delhi has undergone the summer training assignments at IIHMR, Delhi from 1st April to 31st May 2020. The candidate has successfully carried out the study designated to her during internship training and her approach to study has found to be a committed, sincere and diligent student who has a strong drive & zeal for learning. The Internship is in fulfilment of the course requirements. We wish her all the best for future endeavours.

Dr. Pradeep K Panda

Dean- Academics & Student Affairs
IIHMR, Delhi

Ms. Divya Aggarwal (Mentor)

Assistant Professor
IIHMR, Delhi

CERTIFICATE OF APPROVAL

The following Summer Internship Project titled **"Summer Internship Report"** at **"IIHMR, DELHI"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily 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 do 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: Ms. Divya Aggarwal

Assistant Professor

IIHMR, Delhi

FEEDBACK FORM

Name of the student: Vandana Bhatt

Summer Internship Institution: IIHMR, Delhi

Area of Summer Internship:

Attendance:

Objectives met:

Deliverables:

Strengths:

Suggestions for Improvement:

Signature of the Mentor

Date:

Place: IIHMR, Delhi

PLAGIARISM REPORT

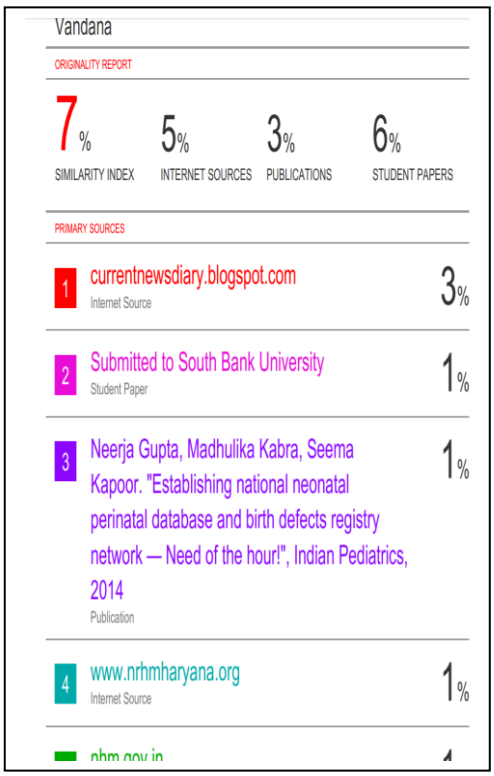
Vandana Task 1

ORIGINALITY REPORT

7%	3%	3%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Shankar Prinja, Deepak Balasubramanian, Atul Sharma, Rakesh Gupta, Saroj Kumar Rana, Rajesh Kumar. "Geographic Inequities in Coverage of Maternal and Child health Services in Haryana State of India", Maternal and Child Health Journal, 2019 Publication	1%
2	Submitted to University of Leicester Student Paper	1%
3	Submitted to University of Glasgow Student Paper	1%
4	esopb.gov.in Internet Source	1%



Vandana

ORIGINALITY REPORT

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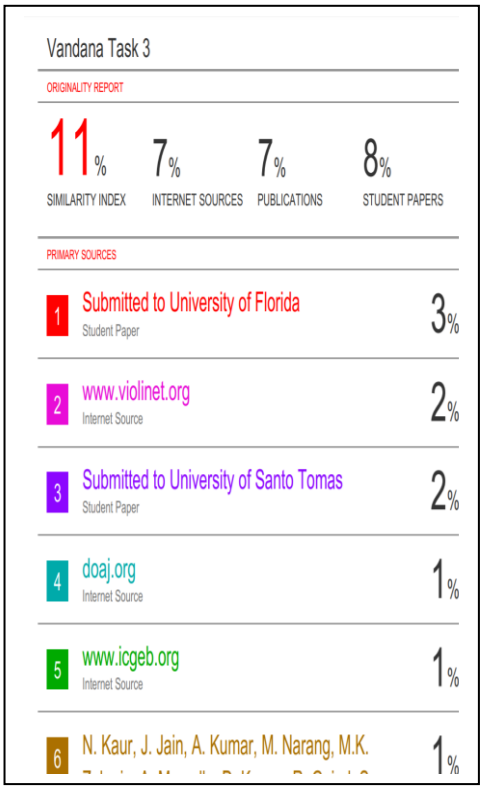
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	currentnewsdiary.blogspot.com Internet Source	3%
2	Submitted to South Bank University Student Paper	1%
3	Neerja Gupta, Madhulika Kabra, Seema Kapoor. "Establishing national neonatal perinatal database and birth defects registry network — Need of the hour!", Indian Pediatrics, 2014 Publication	1%
4	www.nrhmharyana.org Internet Source	1%



Vandana Task 3

ORIGINALITY REPORT

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SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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2	www.violinet.org Internet Source	2%
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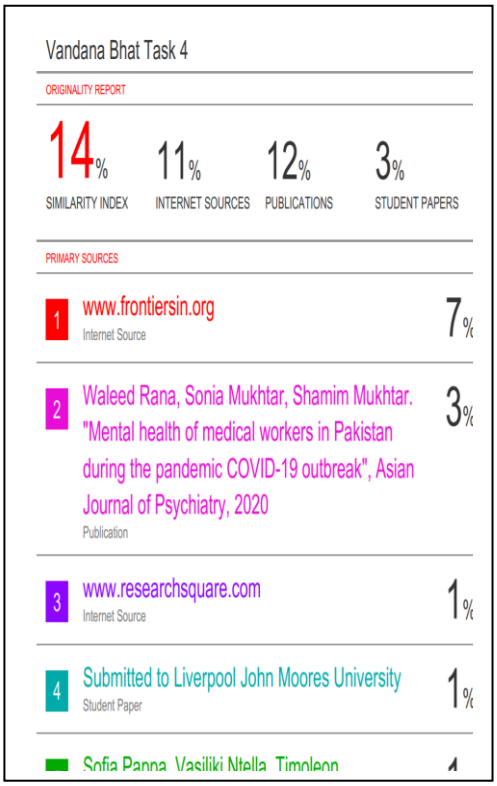
4	doaj.org Internet Source	1%
5	www.icgeb.org Internet Source	1%
6	N. Kaur, J. Jain, A. Kumar, M. Narang, M.K.	1%



Vandana Bhat Task 4

ORIGINALITY REPORT

14%	11%	12%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.frontiersin.org Internet Source	7%
2	Waleed Rana, Sonia Mukhtar, Shamim Mukhtar. "Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak", Asian Journal of Psychiatry, 2020 Publication	3%
3	www.researchsquare.com Internet Source	1%
4	Submitted to Liverpool John Moores University Student Paper	1%

TABLE OF CONTENTS

ACRONYMS/ABBREVATIONS

ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
IMR	Infant Mortality Rate
MCI	Medical Council of India
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
MoHFW	Ministry of Health and Family Welfare
MPHW	Male Purpose Health worker
NHM	National Health Mission
NRHM	National Rural Health Mission
NUHM	National Urban Health Mission
SARS	Severe Acute Respiratory Syndrome
SDG	Sustainable Development Goal

CASE STUDY ON NATIONAL HEALTH MISSION- HARYANA

The name National Health Mission was given in 2013 with the launch of National Urban Health Mission. National Rural Health Mission established in 2005 transformed from mission to sub-mission of NHM in 2013. The NHM including its sub-mission NUHM & NRHM are managed by MoHFW and State government. The aim to launch this initiative was to improve the health indicators by providing accessible, affordable and quality healthcare services to all especially people living in rural & inaccessible areas, women, children and poor. Due to the repeated failure in achieving MDGs, now transformed to SDG, it was realised that the health is a state subject and to identify the barriers as well as for proper functioning, monitoring of programs & activities decentralisation of NHM goals among state will help in achieving desirable outcome. Following this idea State Health Mission came into effect.

MISSION GOALS:

1) To reduce maternal mortality rate to 1 per 1000 live births.

2) To reduce Infant mortality rate to 25 per 1000 live births.

3) To prevent and control morbidity and mortality from communicable, non-communicable diseases, emerging diseases and injuries.

4) To reduce total fertility rate to 2.1.

5) To prevent and reduce anaemia in women of reproductive age group.

6) To reduce prevalence of leprosy to 1 per 10000 population.

7) To reduce incidence and mortality from TB by half.

8) To eliminate Kala-azar and malaria.

9) To prevent nutritional deficiency disease.

10) To prevent vaccine preventable diseases.

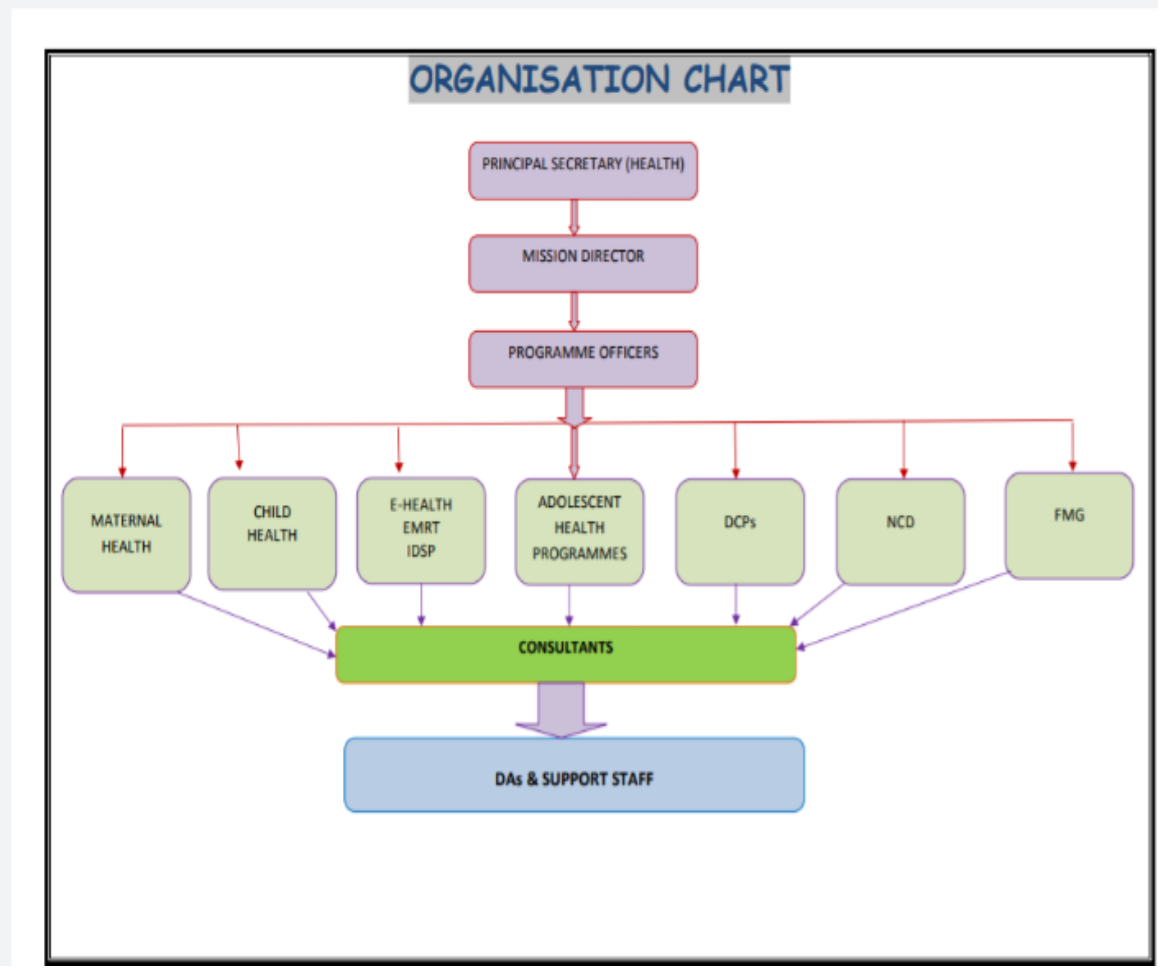
FUNCTIONS OF NATIONAL HEALTH MISSION:

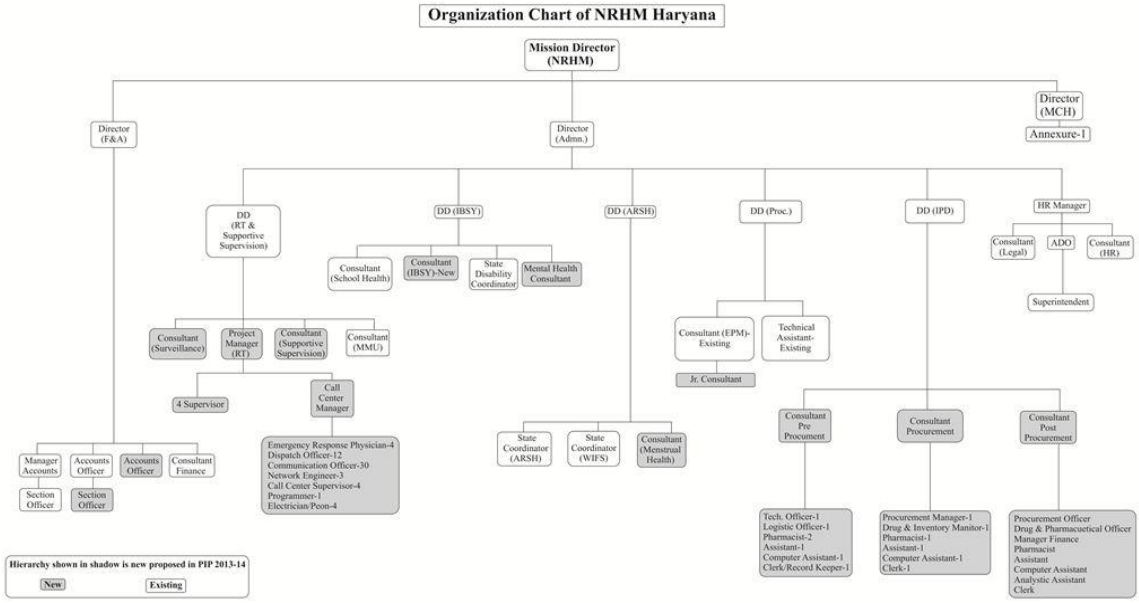
- Provide preventive, promotional, curative and rehabilitative services in public health facilities.

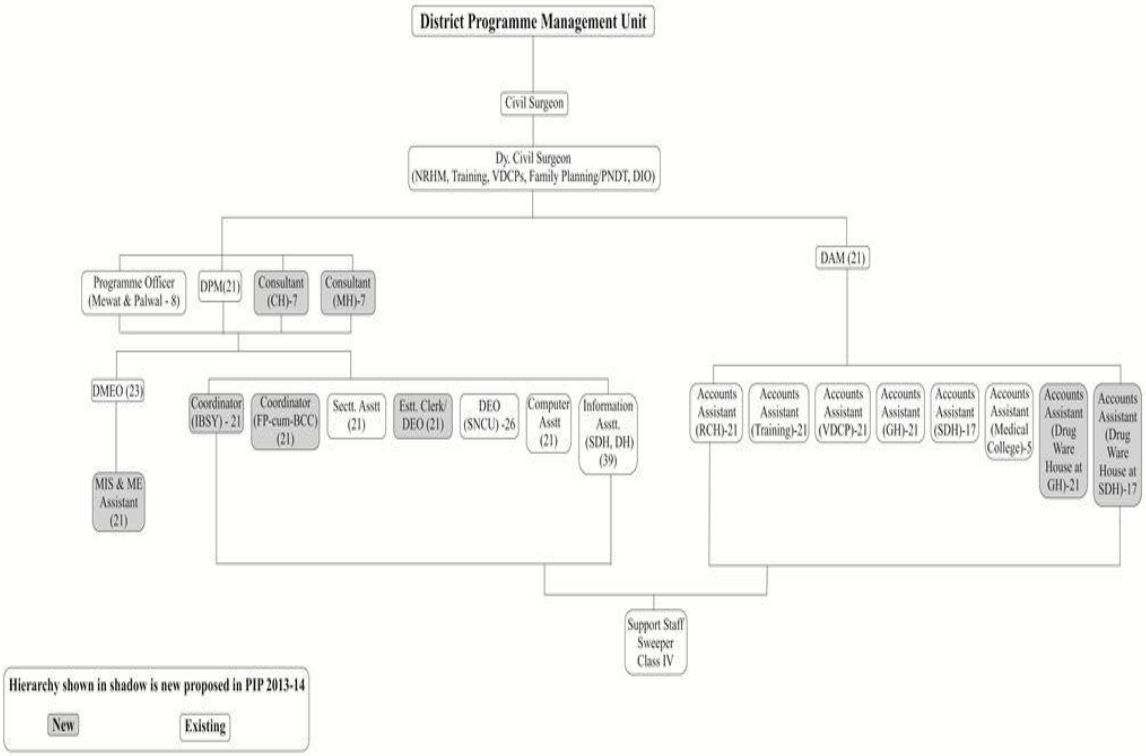
- Provide universal, accessible, affordable and quality health services at all level of healthcare.
- Enhancement and expansion of rural public health infrastructure.
- To identify and respond to the health needs and request of local community.
- Stabilization of the population.
- Provide Mother and Child Health Services to reduce MMR & IMR.
- To reduce vaccine preventable diseases among children and pregnant women by providing immunization services.
- To provide Family Planning Services.
- Essential and emergency Obstetric health care services.
- To prevent sex determination by Enforcing PNDT Act.
- Monitor and implement National Health Programmes.
- Ensure adequate drinking water and safe sanitation services and facilities.
- Active disease surveillance to prevent, control and treat communicable and non-communicable diseases.
- Treatment of common disease, emergency medical condition and accidental injuries.
- Provide essential drugs, diagnostics and treatment services.
- Registration of death and birth through Civil Registration System.
- Inter sectoral coordination in promoting initiatives and activities related to health.
- Promotion of balanced and healthy diet – to reduce nutritional deficiency diseases in the community.
- Provide training and workshops to in service medical and paramedical professionals – To enhance their skill and update knowledge.
- Enforcing of legal aspects like Radiation Protection act Drugs & Cosmetic Act, Mental health Act, MTP Act, Human Organ Transplant Act, Human Anatomy Act and Bio Medical Waste guidelines & their implementation, Prevention of Food and Adulteration Act, Birth and registration act.

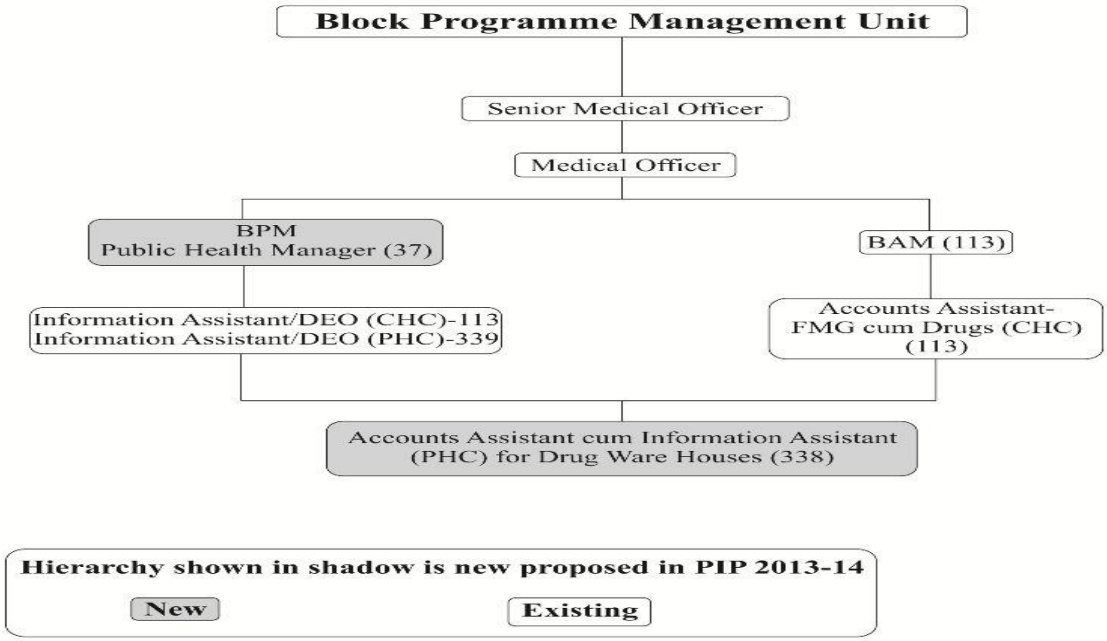
- Behavioural Change Communication to educate people regarding various Health initiatives & programmes to improve the quality of life with the help of various mass media activities.
- Conduct Post mortem examination and Medico legal activities.
- Conduct Medical and Fitness Examination for various purposes like selected candidates for govt service, driving license, pension and disability entitlement.
- Issuance of manufacturing drug license.

ORGANOGRAM:




Organization Chart of NRHM Haryana
Mission Director (NRHM)
Director (F&A)
Director (Admn.)
Director (MCH)
Annexure-1
DD (RT & Supportive Supervision)
DD (IBSY)
DD (ARSH)
DD (Proc.)
DD (IPD)
HR Manager
Consultant (School Health)
Consultant (IBSY)-New
State Disability Coordinator
Mental Health Consultant
Consultant (Legal)
ADO
Consultant (HR)
Superintendent
Consultant (Surveillance)
Project Manager (RT)
Consultant (Supportive Supervision)
Consultant (MMU)
Consultant (EPM)-Existing
Technical Assistant-Existing
Jr. Consultant
4 Supervisor
Call Center Manager
State Coordinator (ARSH)
State Coordinator (WIFS)
Consultant (Menstrual Health)
Consultant Pre Procument
Consultant Procurement
Consultant Post Procurement
Manager Accounts
Accounts Officer
Accounts Officer
Consultant Finance
Section Officer
Section Officer
Emergency Response Physician-4
Dispatch Officer-12
Communication Officer-30
Network Engineer-3
Call Center Supervisor-4
Programmer-1
Electrician/Peon-4
Tech. Officer-1
Logistic Officer-1
Pharmacist-2
Assistant-1
Computer Assistant-1
Clerk/Record Keeper-1
Procurement Manager-1
Drug & Inventory Manitor-1
Pharmacist-1
Assistant-1
Computer Assistant-1
Clerk-1
Procurement Officer
Drug & Pharmacuetical Officer
Manager Finance
Pharmacist
Assistant
Computer Assistant
Analystic Assistant
Clerk
Hierarchy shown in shadow is new proposed in PIP 2013-14
New
Existing


District Programme Management Unit
Civil Surgeon
Dy. Civil Surgeon (NRHM, Training, VDCPs, Family Planning/PNDT, DIO)
Programme Officer (Mewat & Palwal - 8)
DPM(21)
Consultant (CH)-7
Consultant (MH)-7
DAM (21)
DMEO (23)
MIS & ME Assistant (21)
Coordinator (IBSY) - 21
Coordinator (FP-cum-BCC) (21)
Sectt. Asstt (21)
Estt. Clerk/ DEO (21)
DEO (SNCU) -26
Computer Asstt (21)
Information Asstt. (SDH, DH) (39)
Accounts Assistant (RCH)-21
Accounts Assistant (Training)-21
Accounts Assistant (VDCP)-21
Accounts Assistant (GH)-21
Accounts Assistant (SDH)-17
Accounts Assistant (Medical College)-5
Accounts Assistant (Drug Ware House at GH)-21
Accounts Assistant (Drug Ware House at SDH)-17
Support Staff Sweeper Class IV
Hierarchy shown in shadow is new proposed in PIP 2013-14
New
Existing



LEADERSHIP:

- Principal Secretary: Sh. Rajeev Arora, Department of health & family welfare, Government of Haryana.
- Mission Director: Sh. Prabhjot Singh , Department of health & family welfare, Government of Haryana.
- Director (MCH): Dr. V.K Bansal.
- Director (Admin): Dr. J. S. Grewal, Director and Additional DGHS, Department of health & family welfare, Government of Haryana.
- Deputy Director: Dr. Simmi Verma, DD of Child Health, RBSK, RKSK.
- Deputy Director: Dr. Alak Nanda, DD (admin).

HUMAN RESOURCE POLICIES AND PRACTICES:

1) The organisation work five days a week, Monday to Friday from 9 am to 5 pm.

2) Recruitment Policies: The notifications of vacancies with full description are notified officially in through various medium including newspaper, websites and social media.

3) Selection Process: It varies as per the need eligible candidates can walk into direct interviews or may require go through screening exam followed by interview.

Candidates are not eligible who has been dismissed from Govt of India or State govt. While in service or from mission under any level district, state or national.

Age Limit: 18- 42 years except for certain senior posts.

4) Provision of leaves: Depending upon the official post the type and number of leave differs.

- Contractual employees are entitled for 10 Medical leaves.
- Fully paid Maternal leave for 6 months, leave after abortion from 7-30 days depending on trimester of pregnancy.
- Special leave after sterilisation for 7-12 days.
- Casual Leave: 10 and 20 per year for male and female respectively. More than 3 CL cannot be granted in continuation.

5) Compensation and Allowance:

- Financial assistance is provided to the family of deceased employees of SHS & DHS
- TA and DA are provided to employees according to their category ranging from 10,000-20,000. Travel expenses includes local, state or national visit.
- Special allowances to orthopedically handicap employees.

COMMUNICATION CHANNELS AND STRATEGIES:

- Regular display of health-related updates and news on websites of NHM, Government of Haryana.
- Information & Awareness about health events and active programmes among community are provided by newsletter, pamphlet distribution and display of banners in public health facilities.
- Door to Door household visit by ASHA collecting as well as disseminating information on reproductive, maternal and child health including immunization and common disease. She further reports to ANM & MPHWs from where it is directed to CMO and so on till Mission Director.

- ANMOL (ANM Online): This communication initiative is launched in 2016 to improve collection of data with the help of an android application.

ROLES AND RESPONSIBILITIES OF THE TEAM:

1) Mission Director: The mission is headed by MD (NHM) and deals with administrative affairs as well as planning, monitoring and implementing mission activities.

2) DGHS: Under the supervision of financial commissioner & Principal Secretary of department of health, the officer has financial as well as administrative power and responsible for implementation of schemes of health department.

3) Additional-DGHS: The officer is concerned with Policy medical branch and deals with the medical reimbursement, Bio Medical Waste, MCI and centrally sponsored schemes.

4) DHS- Family Welfare: Deals with family welfare and MCH program.

5) DHS- Laboratory: Responsible for control of Communicable Disease, Regulation of Smoking Act, Disease Surveillance Program, Health Camps& melas, epidemic disease act and disaster management.

6) DHS- Training: The officer deals with Mental Health Program, National school health program, De-addiction program.

7) Joint Director: The officer is concerned with mass media branch and Information Education Communication.

8) Deputy Director (Epidemiology): The officer is concerned with National Policy Health branch including control of communicable disease, its surveillance and epidemic disease control.

9) Deputy Director (M&E): concerned with statistical branch that includes death and birth registration, M&E of programs and statistical data of health departments.

10) Assistant: Prepares and put up the files to Head of the branch that is branch officer.

11) Clerks: Subordinate of assistants and assist them. They do typing work, keeping of record and diary.

12) Civil Surgeon: Infrastructure planning & district health institutions supervision, transfer and allocation of task to M.O, planning, monitoring & implementation of all national health programmes, coordination with other departments of the district.

13) District Medical Officer: to assist civil surgeon in administrative work.

SERVICES AND PROGRAMMES:

Services:

- Referral Transport Services
- Reproductive Health Services
- Child and Adolescent health services
- Immunization services
- Family Planning and welfare services
- Nutritional support services to mother and children.
- Prevention and treatment services for Communicable and Non-Communicable Diseases
- Free essential drugs and lab diagnostic services
- Training to medical and paramedics to update skills and knowledge

Programmes:

- Maternal Health: JANANI SUKAKSHA YOJANA
  JANANI SHISHU SUKAKSHA KARYAKARM
- Child Health: RBSK, Mission Indradhanush
- Adolescent Health: RKSK
- Micro Nutrient Supplementation Program
- NRHM, NUHM
- Communicable Diseases: National Malaria Control Program, Revised National Tuberculosis Control Program, National Leprosy Eradication Program
- Non-Communicable Diseases: National Programme for Control of Blindness, NPCDCS, Mental Health Programme
- Behavioural Change Communication

INNOVATIONS AND PATH BREAKING INITIATIVES:

- MIRA CHANNEL for rural women on maternal and child health using RMNCH+A approach:

NEED: failure in reducing MMR and IMR was found due to delivery by traditional method at home setting and by unskilled workers.

PROGRAMME DISCRIPTION: MIRA is a mobile phone channel providing health information and communication to rural females. Awareness is given to them on various issues like vaccination, ante-natal check-up, post-natal check-up, new born care and family planning.

- E- UPCHAAR for effective and efficient delivery of quality healthcare at public health facilities:
  This initiative was implemented by NHM and Haryana SHRC and aims to achieve development of EMR across certain health facilities to streamline data, data retention for referrals and revisits.
- IDENTIFICATION AND MANAGEMENT OF HIGHRISK PREGNANCY CASES:

STRATEGIES IMPEMENTED: Fixed ante-natal days, Tuesday and Thursday.

"Surakshit Jnani Saptah" is for special ANC cases which were left out. High risk pregnancy cases are, provided with red card, given preference for health services in health facilities.

- Essential Pathology Initiative in which free essential diagnostic services are provided with any of the alternative delivery model that is Hub and Spoke model or outsourcing or contacting in model.
- National Ambulance Services: This scheme was launched in 2009 by the government of Haryana to provide referral transportation service during which pre-treatment care is given while transferring the patient to emergency care.

LOCAL REACH:

- Women and Child Development, Govt of Haryana
- Intersectoral coordination with Department of Health Education providing National School Health program in the Government Schools.

- Coordination with Department of Water and Sanitation to provide adequate water supply and safe sanitation.
- Swasthiye Kalyan Samiti: a registered society which includes Government officials and members from Panchayati Raj and even community.

GLOBAL REACH:

- USAID's Health and Finance project, working in partnership with NHM Haryana, developed an application called Haryana Health GIS (HHGIS) which puts all the data together from various HIS while bringing at one place which enables the users to access and analyse easily.
- NHM Haryana health activities for child health are supported by UNICEF.
- NHM Haryana collaborated with Govt. Of Norway and launched NIPI (Norway India Partnership Initiative) which aims to achieve SDG and focuses on reducing Infant & Neonatal Mortality Rate by improving service utilisation of public health facilities.

CHILD HEALTH PROGRAM- NATIONAL HEALTH MISSION, HARYANA

In India, every year twenty-six millions of children born. According to Censes 2011, out of all the country's population children in the youngest age group (0-6 years) accounts for 13% of total population. Globally, number of children between 0-18 years is largest in India. Despite of economic growth in past decades child health indicators remains a cause of worry, as India contributes 20% to global child mortality. In terms of numbers, under 5 mortality is the highest in India which is approximately 15.8 lakh. Along with poor child health indicators other directly related health indicators like maternal and reproductive health, adolescent health, family planning and nutritional status indicators are also below the desired level. Maternal health and child health are inseparable entities whereas pre conceived nutritional and reproductive health, adolescence health and adequate use of family planning services directly impacts the child and mother health. In order to improve child health, Ministry of Health & Family Welfare (MoHFW) in association with National Health Mission (NHM) launched RMNCH+A programme.

The child health programme under NHM initiates interventions which improve child survival as well as addresses the factors responsible for neonatal, infant and under-five mortality. Another aspect of this approach is to ensure that important and critical services are available for them at home, through various health facilities including PHCs, FRU and tertiary level of health care facilities and through community outreach mechanism.

CHILD HEALTH GOALS OF NHM UNDER NATIONAL HEALTH POLICY 2017:

The child health indicators as per NHP include Infant death rate, Neonatal death rate and death of children below five years of age. As per SRS 2017, current level of IMR, NMR and U5MR is 33, 23 and 37 respectively. While the NHP targets to achieve IMR as 28/1000 live births by 2019, NMR as 23/1000 live births by 2025 and U5MR as 37/1000 live births by 2025.

CHILD HEALTH GOALS UNDER SUSTAINABLE DEVELOPMENT GOALS:

Child health is mentioned in the second sub-goal of goal number 3 of SDGs which states that by 2030, mortality of newborn, infant & children age less than 5 years due to preventable cause should be ended and also reduce the neonate death rate and under five death rate to below the level of 12/1000 live births and 25/1000 live births respectively.

PROBLEM STATEMENT:

Cause and burden of child deaths in India:

As per WHO-CHERG 2012, among all the mortalities in children below five years of age, 52% accounts to neonatal deaths, 15% are due to pneumonia, 11% are from diarrhoeal diseases, 3% from measles, 4% from injuries and 5% from other causes. Almost one third of all the causes are due to infectious disease which are preventable. While among the neonatal causes of deaths premature births are the most common cause followed by pneumonia, septicaemia, asphyxia and congenital defects.

CHILD HEALTH SCHEMES UNDER NHM HARYANA:

1) FBNCC-Facility Based New born and Child Care:

Neonatal deaths contribute 2/3rd of the deaths to Infant Mortality. To address this issue and to reduce early neonatal and late neonatal deaths this scheme facility based new born care is launched in various public health facilities. Under NHM, for care of neonates and sick

new-borns specialised facilities such as New Born Stabilisation Units, Special New Born Care Units and New Born Corners are established.

Special New born Care Units (SNCU): There is at least one SNCU in each district of Haryana in which there are 12-20 beds in one SNCU which includes four doctors and ten to twelve nurses to provide services round the clock.

New Born Stabilisation Units (NBSU): These units are present at community health centres or first referral units in which one unit includes four beds, doctors and nurses to provide critical care and new born stabilisation services as the name suggests its functions.

New Born Care Corners (NBCC): Unlike SNCU and NBSU, NBCC is a one bedded facility which is attached to Caesarean Section Operation Theatre and labour rooms for provision of basic and essential care to newly born. NBCC must be present at all the facilities where deliveries are taking place.

2) JSSK- Janani Shishu Suraksha Karyakram : This scheme was launched in 2011 and provides services to both sick new born till 1 year and pregnant women. JSSK aims to reduce maternal and child mortality rate by promoting institutional deliveries and providing free transport services. In order to eliminate out the barriers, like out of pocket expenditure and transportation expenses, in seeking institutional deliveries this scheme was launched. This provides services till one year from birth which includes free treatment, free drugs, free diet and diagnostics, free blood if required in case, free transport services to mother and child from home to health facility and from facility to home, in case of referral free transport service is provided to both mother and child.

3) F-IMNCI- Facility Based Integrated Management of Neonatal and Childhood Illness: This initiative was launched to empower health care providers with essential skills to treat children and new born illness at institution level as well as community level. This includes providing skills for management of admitted patients suffering from common causes of childhood and neonatal deaths such as prematurity, low weight at birth, sepsis, malaria, diarrhoea, asphyxia, severe malnutrition, pneumonia and meningitis. This is given in the form of training to the various health personnel like medical officers, ANMs, nurses at secondary health centres and even PHCs where deliveries are taking place. This is eleven days training course.

4)IMNCI- Integrated Management of Neonatal and Childhood Illness: This initiative aims to improve skills of health professionals which helps in case treatment and management, to improve health care system in an integrated manner for child care and survival such as referral systems, capacity building of the facilities and logistics availability. It also aims to improve family as well as community health practices. The target population is children below 5 years of age.

5) HBNC- Home Based New born Care: This new scheme provides home based care to new born and mother up to 42 days after delivery. It was launched to incentivise ASHA for visiting home of new-borns till 42 days. This includes new born baby birth weight recording, ensuring vaccine dose of BCG and first dose of DPT and OPV, ensuring new born baby and mother are safe, ensuring the birth registration has been done. On completion of all the above tasks ASHA is incentivised with 50/- for each home visit for duration of around1 hour. This amounts to 250/- for 5 visits which should be paid to ASHA only on completion of 45 days from birth.

6) Infant and Young Child Feeding: This is an intervention for prevention of death as well as morbidity by improving survival rate and ultimately reduces post neonatal mortality, infant mortality and deficiency disorders in under 5 child mortality. It promotes guidelines for breastfeeding which includes promoting breast feeding within one hour of birth and promotion of exclusive breast feeding from birth till six months and promotion of complementary breast feeding till two years of age.

7) Nutritional Rehabilitation Centres: The aim of this scheme is to treat severe malnutrition among children as malnutrition is one of the most important contributing factor for mortality due to infections like diarrheal diseases, pneumonia, sepsis and so on. NRCs are specialised set ups at public health care facilities for inpatient treatment and management of those children suffering from severe acute malnutrition. Adequate counselling is given to the mothers regarding diet and proper feeding once the child started showing signs of recovery and followed by follow up advise on discharge from the premises.

8) Micro Nutrient Supplementation Programme: This programme was launched to reduce the existing cases of vitamin A deficiency to the level of less than 0.5% and to provide essential micro nutrients such as folic acid and iron. Target population for vitamin supplementation includes children of nine months of age till five years.

9) Rashtriye Bal Swasthya Karyakaram (RBSK): This is one of the most important initiative to reduce child mortality as well as morbidity which aims to early identification and early intervention with the help of screening and regular care of children from birth till 18 years of age in order to detect 4 D's viz. congenital defect at birth, diseases, any deficiency and delay in developmental landmarks including disability. Children from 0 to 6 years will be managed at District Early Intervention Centre where as children in the age group of 6-18 years will be managed at existing public health care facilities. Screening for the first time is done at delivery point of the institution by medical officers, paediatrician and staff nurse. After the discharge from the institution that is after 48 hours till 6 weeks screening is done by ASHA as a part of HBNC package. From 6 weeks to 6 years outreach screening is done at anganwadi centres by mobile health teams and also at schools for 6-18 years of age group. At any level of screening treatment and interventions to the child are given at zero cost to the family.

The health conditions to be screened under RBSK are following: -

CONGENITAL DEFECTS: Neural tube defect, down syndrome, cleft palate and cleft lip, developmental dysplasia of hips, club foot, congenital cataract, congenital deafness, congenital heart diseases, retinopathy.	DEFICIENCY: Anaemia, vitamin A deficiency, vitamin D deficiency, severe malnutrition, goitre.
CHILDHOOD DISEASES: Skin disorders like scabies, eczema and fungal infection, otitis media, rheumatic heart disease, reactive airway disease, dental conditions, convulsive disorders.	DEVELOPMENTAL DELAYS AND DISABILITIES: Impairment of sense organs including vision, hearing and Neuro- motor impairment, any delay in the motor function, cognitive function and language.

INNOVATIONS BY NHM HARYANA:

1) “MIRA CHANNEL for rural women on maternal and child health using RMNCH+A approach”:

Need: failure in reducing MMR and IMR was found due to delivery by traditional method at home setting and by unskilled workers.

Program description: MIRA is a mobile phone channel providing health information and communication to rural females. Awareness is given to them on various issues like vaccination, ante-natal check-up, post-natal check-up, new born care and family planning.

2) Identification and Management of High-Risk Pregnancy Cases:

Strategies implemented: Fixed ante-natal days, Tuesday and Thursday.

“Surakshit Jnani Saptah” is for special ANC cases which were left out. High risk pregnancy cases are, provided with red card, given preference for health services in health facilities.

COMPARATIVE STUDY ON RECENT OUTBREAKS IN INDIA

BACKGROUND:

India has witnessed number of outbreaks, pandemics and epidemic events throughout the history. From 19th century to 21st century, the pattern of occurrence of disease, their impact, frequency of occurrence, nature and outcome has changed. With the change in the standard of living, urbanisation, climate change and life style the significant transformation resulted in change in the epidemic trends and effects. For a developing country including India other factors like poor sanitation, unsafe water consumption and malnutrition are also related to health events and outbreaks. With the advancement in science and technology, the transportation has become easy and common throughout the nation and world as well. This results in easy movement of cases from affected geographical place to unaffected area.

According to K. Park a disease can be called as an epidemic when the incidence of that disease is more than number of cases expected in large geographical area whereas a pandemic is called when an epidemic affect at global level. From the first Pandemic of cholera of 1817 to pandemic of 2020 COVID- 19, the epidemiological trend has changed. India has witnessed various episodes of epidemics such as influenza, cholera, plague, hepatitis, encephalitis, dengue and so on. While world has successfully eradicated disease like small pox, poliomyelitis, guine worm and yaws incidences of new emerging and re-emerging diseases are rising since last many years. Cases of Ebola, Zika virus and Nipah virus have reported in India in past few years. This article will focus on epidemiological trends of recent five epidemics in India.

OBJECTIVE:

1) To study the recent five epidemic events occurred in India.

2) To compare these epidemics based on epidemiological and demographic variables.

REVIEW OF LITERATURE:

S. No.	Study Name	Author & Publication	Methodology	Result
1.	Dissecting an outbreak: A clinic-epidemiological study of Nipah virus infection in Kerala, India, 2018	Althaf Ali. Journal of Global Infection and Disease, Jan- March 2020.	Retrospective epidemiological survey with sample of 337 suspected cases in 2018.	The Index case was infected from fruit bat and rest of the confirmed cases were from direct contact with confirmed case.

S.NO.	Study Name	Author& Publication	Methodology	Result
2.	Lesson learnt from the India H1N1 (Swine flu), epidemic: Predictors of outcome based on epidemiological & clinical profile.	R. M. Kshatriya. Journal of Family Medicine & Primary Care, Nov-Dec 2018	Retrospective epidemiological survey with sample size of 65 cases in 2015	The common symptoms were of respiratory tract infection like fever, cough and dyspnoea. The prognosis of serious patients was not favourable.
3.	Chikungunya outbreak in Delhi, India 2016: report on co infection status & co-morbid condition in patients.	N. Kaur, J. Jain. New microbes & New Infection, Nov 2017	Cross sectional epidemiological survey with sample size of 600 patients of tertiary care hospital in 2016	The probability of co infection with dengue was high. Post febrile joint pains were the most common observation seen.
4.	An epidemiological study of Hepatitis outbreak in Odisha.	M. Mohanty, S. K. Jen, D. M. Satapathy. Journal of communicable Disease, 2017.	Epidemiological house hold survey with sample size of 281 households in Sep 2014	Outbreak resulted due to contamination of municipality drinking water.

5.	A comprehensive study on the 2012 Dengue fever outbreak in Kolkata, India.	Indrani Bhattacharya. International Scholarly Research Article, published on7 Aug 2013.	Epidemiological survey and retrospective study design.	All four serotypes of dengue were found in the blood sample suggestive of Kolkata a hyper-endemic area of dengue virus indicating requirement of adequate vector control measures.

COMPARATIVE ANALYSIS:

1) Nipah outbreak (2018):

In May 2018 Kerala, the southern part of India, declared NiV as an epidemic. India has experienced NiV outbreaks in 2001 and 2010 in west Bengal. The first case was reported in Malaysia in 1998. Total 23 patients were affected from this virus and with the help of contact tracing mechanism all the affected patients were successfully identified and isolated from healthy population.

Variables:

a) Age: Median age- 56 years

b) Sex: Male – 65% of total, Female- 35%

c) Vulnerable/ Population at Risk: Emergency resident doctors, health professionals without Prevention Protective Equipment, poor hand hygiene, patients sharing same ward and facility with case, overcrowded hospital and poor ventilation.

d) Mode of Transmission: Direct Transmission. Contact with nasopharyngeal, cerebrospinal, gastrointestinal discharge including vomitus and faecal matter.

e) Mortality rate: 91.3%

2) Chikungunya outbreak (2016):

Since 1960s India has experienced number of outbreaks of CHIKF. Before 2016, the last epidemic occurred in 2010 in the region of Delhi where it has affected a large number of population. Though the mortality and prognosis for this epidemic were proved favourable still it has resulted in high DALY burden due to affection of loco- motor system.

Variables:

a) Age: Mean age- 38 years, Range- 11-68 years.

b) Sex: Male> Female, Ratio- 1.1:1.

c) Vulnerable/ Population at Risk: Age>65 years, Poor nutrition conditions, co morbidities such as renal disorders, osteoarthritis, arthralgia, hypertension, residents of tropical region.

d) Mode of Transmission: Indirect transmission, no man to man transmission, vector- borne disease.

e) Mortality rate: 1 per 1000 patients.

3) Indian Swine Flu- H1N1 outbreak (2015):

Influenza A has witnessed many pandemics and epidemics in the past. The first case was reported in Mexico in 2009. This virus H1N1 or also called as swine flu, affects respiratory tract resulting in mild symptoms as cough and cold to severe symptoms like collapse of lung, pneumonia and other significant lung pathology.

Variables:

a) Age: Mean age- 50.23 years

b) Sex: Male > Female, Male -62%, Female- 38%.

c) Vulnerable/ Population at Risk: Immuno-compromised individuals, known case of tuberculosis and AIDS, co morbidities like diabetes mellitus, hypertension, cardio vascular disease, liver pathologies, anaemia and pregnancy.

d) Mode of Transmission: Direct contact transmission or contact with virus contaminated fluids like nasopharyngeal, cerebrospinal and other body fluids.

e) Mortality rate: 15.38%

4) Odisha Hepatitis Epidemic (2014):

Hepatitis E is a highly infectious disease which has oro- faecal route of transmission. In 2014 due to leakage in the municipal pipeline water odisha hepatitis E outbreak burst.

Variables:

a) Age: 20-39 years.

b) Sex: Male> Female, Male- 12.2% and Female- 5.83%.

c) Vulnerable/ Population at Risk: Pregnancy, poor sanitation, unsafe water, low socio-economic population.

d) Mode of Transmission: Indirect transmission, Oro- faecal route, Water- borne disease.

e) Mortality rate: No death reported

5) Dengue Outbreak (2012):

India has witnessed frequent outbreaks of Dengue where as it is endemic in many of the state due to poor municipal system and infrastructure. All the 4 serotypes of dengue were found in the sample of cases.

Variables:

a) Age: 11-30 years

b) Sex: Male> Female

c) Vulnerable/ Population at Risk: Geographical area- tropical, poor shelter, people living outdoor, locality- stagnant water, poor drainage system.

d) Mode of Transmission: Indirect transmission, Vector borne disease.

e) Mortality rate: 1%

CONCLUSION:

Despite of significant economic growth in past few decades, health conditions like disease due to poor sanitation, unsafe water and food, poor ventilation, overcrowding and malnutrition still exist in significant amount. In the analysis section of past few epidemics the morbidity, mortality, virulence, mode of transmission and age group at risk varies from each other but there have various similarities too. One can analyse that the burden of infectious disease of virus in nature have increased where as in the 19^{th} century bacterial infection epidemic and pandemic like cholera, plague was more prevalent. Zoonotic diseases, disease from animal to human, have seen a significant rise. Male population were found more affected due to these epidemics than female. The morbidity rate is highly variable from one another but high morbidity due to co- morbidities like non communicable disease is common in all. This indicates that epidemics may result due to infections and communicability but their outcome and effects are affected by non-communicable diseases.

Research Study

Prevalence of Insomnia among Health Professionals during COVID-19 Pandemic in Delhi

INTRODUCTION:

The World Health Organisation on 30th January, 2020 notified the occurrence of a newly discovered virus, coronavirus - a highly contagious microbe, and declared a Public Health Emergency of International Concern (PHEIC) which is the sixth PHEIC after H1N1 influenza (2009), Polio (2014), Ebola in West Africa (2014), Zika (2016), Ebola in DRC (2019) [1]. On 11th February 2020 novel coronavirus officially named as Corona virus disease 2019 (COVID-19). WHO defined coronavirus disease (COVID-19) as an infectious disease and declared the outbreak as a pandemic in March 2020 [2,3]. The virus appeared for the first time in Wuhan city of China and there from proliferated to the major geography of the world. As of May, 2020, the world has witnessed more than 5 million cases in more than 188 countries due to COVID-19 [3]. India reported its first case in January 2020 and thereafter proliferated throughout the country with the massive number of cases. Delhi is among those six cities which account for half of the reported cases in the country [4]. Continuous multiplication in the number of positive cases in the state has stressed the current healthcare facilities especially their workforce. The outbreak not only caused great public concern, but also brought about huge psychological distress, especially for medical staff of healthcare settings [5].

The corona virus disease impacts physical, especially respiratory organs, social and mental aspect of health. One of the most common manifestation of mental and psychological distress is Insomnia. Insomnia can be called simply as sleeplessness with daytime fatigue or unable to asleep or taking longer than 30 minutes. The condition may result from any of the cause such as physical cause, mental cause or behavioural cause [6].

Stress is considered as the one of the major cause of the condition. It causes activation of mental and physical functions of the body in excess than the demand, and this activated endocrine system (HPA axis) causes incompatibility with normal sleep. The dysfunctional

endocrine system may lead to sleep disorders which further aggravate the deviated HPA system, thereby resulting in a vicious cycle of stress and insomnia[5].

In addition to stress, disturbance in the biological clock of the body tends to cause sleep disorders. This circadian distress is temporary in majority of the shift workers following recovery after returning to normal sleep schedule [7]. However, during the pandemic, health workers exhaustively working round the clock to combat the disease. The overburden of work diminishes health workers' ability to sleep which results in insomnia and daytime drowsiness followed by sleepiness [5].

The rising burden of the catastrophic pandemic especially mortality among health professionals has become a cause of concern among health workers. The fear of contracting infection and transmitting virus to their families, shortage of PPE kits and physical harm by the neighbours, as stigma exits among the general population that medical staff may susceptible to carry the virus, has tremendously impacted the psychological aspect of health. In addition to all these factors, the exponential rise in the cases reported have increased the workload among health care workers which may contribute to restless sleep and even sleeplessness[5]. According to WHO," among the mental causes of Insomnia, the health care workers may encounter disturbing psychosocial occurrences ". Presence of insomnia has a direct as well as indirect impact on quality of life resulted from anxiety, stress, daytime fatigue and so on. Insomnia with high severity index affects general health condition leading to poor health related quality of life (HRQOL**)** [6].

Though India is among the top 10 countries reported the highest number of COVID cases, no study conducted yet to estimate the prevalence rate of sleep related conditions among health care providers during the Covid-19 outbreak. This study aims to identify the impact of pandemic on sleep related health of health professionals in terms of prevalence rate in Delhi where significant numbers of cases are prevalent.

OBJECTIVE:

To estimate the prevalence of insomnia amongst health professionals during covid-19 pandemic.

METHODOLOGY:

A cross- sectional questionnaire based descriptive study was conducted among practising physicians and nurses working in different healthcare settings of Delhi in May 2020. The physicians and nurses involved in various facilities including clinic, nursing home centre and hospital were recruited in the study.

STUDY Sampling Method and Size:
The study adopted simple random sampling and the sample size was estimated using the following formula:

$n = Z_{1-\alpha/2}^{2} \, pq / d^2$

where p= 36% (in the previous study 36% of medical staff had insomnia during COVID outbreak in china) [5]

Z= 1.96 for 95 % CI

d= 10% (absolute precision)

After considering 10% drop outs, final sample size was 96.

The questionnaire was administered through social media, Facebook and WhatsApp, in the form of goggle document to those who were part of medical groups and gave consent to participate in the study. The respondents were briefed about the questionnaire and the study objective. A total of 107 responses were received out of which 11 were excluded from the study those were on medication for sleep related disorders or any chronic disease. Also, physicians and nurses not working in healthcare setting currently or working in the state other than Delhi were excluded from the study.

The questionnaire consisted questions related to demographic, general and specific information regarding sleep pattern. The initial part of the questionnaire comprised of questions with respect to age, gender, occupation, place of work and current working status in relation to healthcare setting. Questions based on information of respondents' Identity were not included into the questionnaire to ensure the anonymity. The last section of the questionnaire is composed of 7 questions measuring insomnia level with the help of Insomnia Severity Index (ISI) Scale. A score of $\geq$ 15 was considered as clinically significant insomnia.

RESULT:

A total of 107 participants were recruited in the study from which 96 were selected for the study after excluding 11 subjects. Out of 96 participants, 51 were males and 45 were females (figure 1). The participation by occupation was 60 physicians and 36 nurses (figure 2). According to Insomnia Severity Index scale 19(32.6%) physicians and 15 (41.6%) nurses were found to have clinically moderate and severe Insomnia. Likewise, 41 (68.4%) physicians and 21(68.4%) nurses were found non-insomniac (figure 3). The distribution of insomnia according to age and gender was found significant in the age group of 26-35 years and relatively higher in males (37.2%) than females (33.3 %). The prevalence of Insomnia among doctors and nurses was found 34.4% (Figure 4).

Table 1: Distribution of insomnia according to age, gender and occupation

Variables	Insomnia Present (%)	Insomnia Absent (%)		Total
		Subthreshold Insomnia (%)	Non- Clinical Insomnia (%)	
Age				
21- 25	8(25)	9 (28.1)	15 (46.8)	32
26- 30	16 (44.4)	5 (13.8)	15 (41.6)	36
31- 35	6 (46.1)	2 (15.3)	5 (38.4)	13
36- 40	1 (25)	3 (75)	0 (0)	4
41- 45	0 (0)	2 (100)	0 (0)	2
46- 50	2 (33.33)	2 (33.3)	2 (33.3)	6
51- 55	1 (50)	0 (0)	1 (50)	2
56- 60	0 (0)	1 (100)	0 (0)	1
Gender				
Male	19 (37.2)	15 (29.4)	17 (33.3)	51
Female	15 (33.3)	9 (20)	21 (46.6)	45
Occupation				
Physician	19 (31.6)	15 (25)	26 (43.3)	60
Nurse	15 (41.6)	9 (25)	12 (33.3)	36

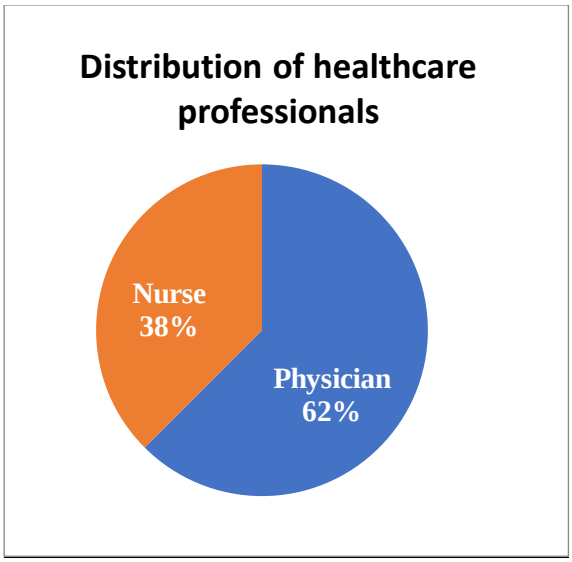


Figure 1

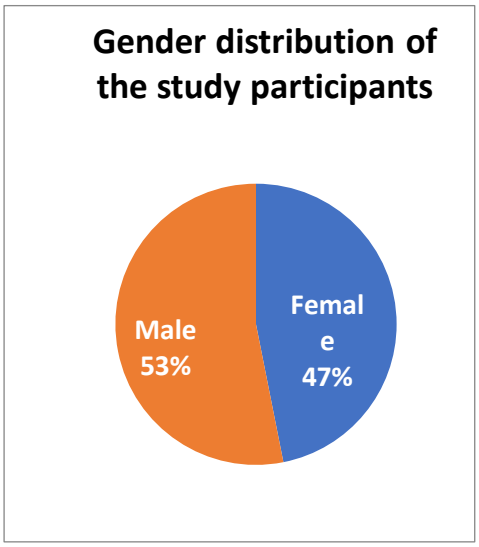


Figure 2

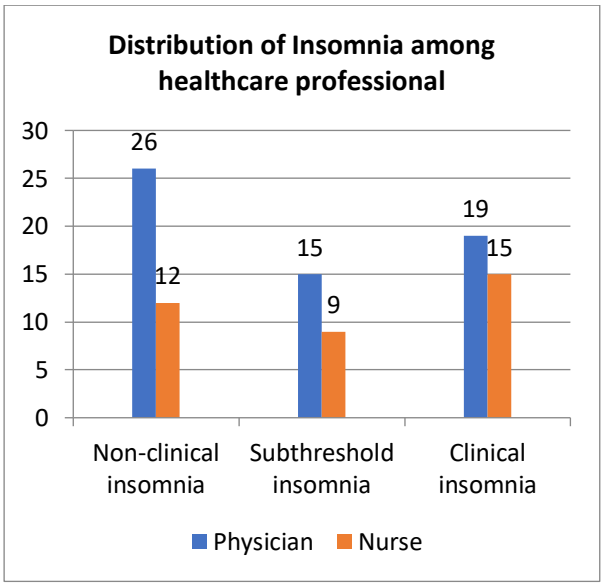


Figure 3

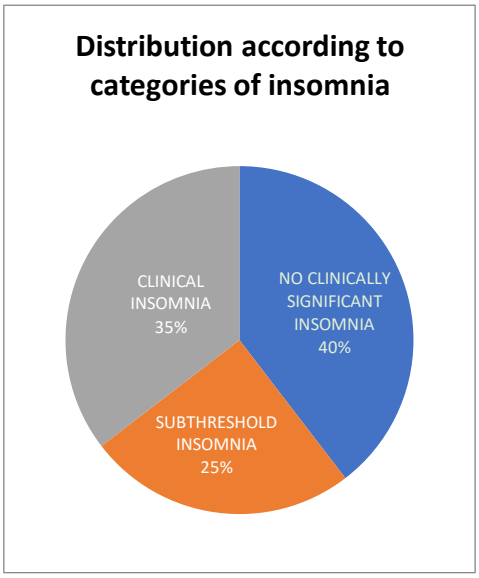


Figure 4

DISCUSSION:

This study found that prevalence rate of insomnia in the health professionals of Delhi during COVID-19 pandemic was 35% which was consistent with the 36.1% in China during COVID outbreak [5]. During SARS epidemic prevalence rate of insomnia, in Hong King was 34.2% and 37% in Taiwan [8,9] ,was congruous with the current study. A longitudinal study during the SARS epidemic analysed that the quality of sleep was disrupted among the medical staff and suggested the existence of association between insomnia and stress due to outbreak of contagious disease[5].

Another finding that was identified in the current study was prevalence rate of insomnia in nurses was somewhat higher than in the physicians, this was in line with finding of a study on post SARS outbreak stress in which nurses score higher than the doctors which further leads to insomnia [10].

The findings of this study can help enlighten the health professionals and associated stakeholders regarding the level of psychological distress on health workers. Precise interventions such as cognitive insomnia behaviour therapy (CBTI) can effectively treat acute insomnia. It consists of wide range of interventions including sleep hygiene education, sleep restriction, relaxation therapy, stimulation control, sleep restriction, and cognitive therapy[11].

Though this was the first study to focus on dysfunction of sleep quality in the form of insomnia among health professionals during COVID pandemic, the study has some limitation too. First, the sample size of the study was small as the working physicians and nurses were abundant with COVID pandemic workload. Second this study was conducted in short duration due to time limitation. Third, questionnaire was administered through social media to the health professionals due to which the doctors and nurses those frequently use social media have participated in the study.

CONCLUSION:

This study ascertained that more than one third of the physicians and nurses suffered from Insomnia symptoms during COVID -19 pandemic and one fourth of the health professionals likely to suffer from latent insomnia or sub threshold insomnia. Precise intervention is required which can further effectively ameliorate the problem of insomnia amongst the healthcare professionals.

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BMJ Open 2019;**9:**e033457. doi: 10.1136/bmjopen-2019-033457

ANNEXURE

Questionnaire

Prevalence of Insomnia among health professionals during COVID- 19 pandemic in Delhi

consent

* Required

The purpose of this study is to estimate the prevalence of insomnia among health professionals during COVID-19 outbreak in Delhi. Your participation in this study is voluntary and you may withdraw anytime you feel uncomfortable with the questions asked in the form. Your participation will involve providing information to the questions in this form. The information collected will be kept confidential. Any identifiable information about you will be kept strictly confidential. By clicking on " I hereby give my consent" you agree to participate in the study. *

I hereby give my consent

Demographic and Medication Information

1)Age (in completed years) *

Your answer

2)Gender *

Female

Male

Other:

3) Occupation *

Physician

Nurse

Other:

4) Which state/ UT are you currently working in? *

Delhi

Other:

5) Are you working in the health care facility currently? *

Yes

No

6) Are you on medication for any chronic disease? *

Yes

No

7) Are you on medication for any sleep related problem? *

Yes

No

Untitled Section

Please rate the following statements which you felt for the last 2 weeks

8) Difficulty falling asleep *

None

Mild

Moderate

Severe

Very Severe

9) Difficulty staying sleep *

None

Mild

Moderate

Severe

Very Severe

10) Problems waking up too early *

None
Mild
Moderate
Severe
Very Severe

11) How SATISFIED/ DISSATISFIED are you with your CURRENT sleep pattern? *

Very Satisfied
Satisfied
Moderately Satisfied
Dissatisfied
Very dissatisfied

12) How NOTICEABLE to others do you think your sleep problem is in terms of impairing the quality of life? *

Not at all Noticeable
A little
Somewhat
Much
Very Much Noticeable

13) How WORRIED/ DISTRESSED are you about your current sleep problem? *

Not at all worried
A little
Somewhat
Much
Very much Worried

14) To what extent do you consider your sleep problem to INTERFERE with your daily functioning (e.g. daytime fatigue, mood , ability to function at work/ daily chores, concentration, memory, mood etc) CURRENTLY? *

Not at all Interfering

A Little

Somewhat

Much

Very much Interfering