

Summer Internship
At
IIHMR, Delhi (April 1 to May 31st, 2020)

A Report
By
Adarsh Veer Sisoudiya
PG/19/004

Post-graduate Diploma in Hospital and Health Management
2019-2021



Acknowledgement

At the first, I would like to thank the Almighty God for showering his blessings and for being the wellspring of direction, wisdom and perseverance throughout the study, without which this study could not have been completed.

I am obliged to my mentor **Dr. Pradeep Panda**, Professor and Dean (Academics & Student Affairs) for his constant encouragement, continuous motivation, boundless cooperation, significant direction, guidance, suggestions, and proposals which helped me to finish each part of this venture..

I am extremely grateful to **Dr. Shankar Das**, Director of IIHMR Delhi for giving me the opportunity to undertake this project.

I am also extremely thankful to all my faculties..

I express my profound gratitude to my *family* for providing me with unfailing support and love throughout my life and this thesis would not be possible without them.

Table Of Contents

Sl. No.	Contents	Page No.
1	Case Study	
1(a)	Division and Technical Centre	
1(b)	Organogram	
1(c)	Leadership	
1(d)	National Health Programs	
1(e)	Functions	
1(f)	Rabies	
1(g)	Leptospirosis	
1(h)	Zoonotic Diseases	
2	Comparative Study	
3	Literature based report	

Abbreviations

NICD- National Institute of Communicable Disease

MII- Malaria Survey of India

NMEP- National Malaria Eradication Program

NAMP- National Anti Malaria Program

NVBDCP- National Vector Borne Disease Control Program

WHO- World Health Organization

AIDS- Acquired Immuno Deficiency Syndrome

CD4- Cluster of Differentiation 4

HBV- Hepatitis B Virus

HCV- Hepatitis C Virus

IEC- Information Education and Communication

IDSP- Integrated Disease Surveillance Program

AMR- Anti Microbial Resistance

NAP- National Action Plan

ICMR- Indian Council of Medical Research

NACO- National AIDS Control Organization

CDC- Centre for Disease Control and prevention

GHSA- Global Health Security Agenda

EIS- Epidemic Intelligence Service

QMS- Quality Management System

UNICEF- United Nation Children's Fund

ELISA- Enzyme Linked Immunosorbent Assay

IFA- Immunofluorescent Assay

IgM- Immunoglobulin M

IgG- Immunoglobulin G

CSF- Cerebro Spinal Fluid

NRCP- National Rabies Control Program

COPD- Chronic Obstructive Pulmonary Disease

Case Study

The organization that I chose for my case study is National Institute Of Communicable Diseases (NICD). This organization plays numerous roles, has various departments and has a role in battling against both communicable and non-communicable diseases.

INTRODUCTION

The National institute of communicable diseases (NICD) had its root as Central Malaria Bureau, created at Kasauli (Himachal Pradesh) in 1909. Its name was changed in the year 1927. It was called as the Malaria Survey of India. The association was moved to Delhi in 1938 and called as the Malaria Survey of India (MII). Considering the genuine reducing accomplished in the pace of intestinal disorder under National Malaria Eradication Program (NMEP), Administration of India chose to improve and widen the exercises of the foundation to cover other transferable illnesses. On July 30, 1963 the MII was renamed as NICD to deal with these extra duties.

The affiliation was created to fill in as a national point of convergence of hugeness for control of transferable afflictions. The limit of the establishment also included various regions of getting ready and research using multi-disciplinary consolidated strategy. The foundation was in like manner expected to offer position to the States and Union spaces (UTs) on smart thriving appraisal and research center based indicative associations. View of transmittable torments and scene appraisal likewise kept a key piece of its exercises.

The Organization is one of its exceptional kind in the city of Delhi having such an extensive amount green zone with about 80% as open region. The Foundation has got three enormous rambling yards with very much kept up plants just as various littler nursery islands. The central command of the directorate of National Anti Malaria Programme (NAMP), presently named as National Vector Borne Disease Control Programme (NVBDCP) is situated on the grounds of NCDC.

The Establishment is under legitimate control of the Director General of Health Services, Ministry of Health and Family Welfare, Govt. of India. The Director is the administrative and specific pioneer of the Institute.

The Establishment has its headquarter in Delhi. It has 8 branches situated at Patna (Bihar), Kozikode (Kerela), Alwar (Rajasthan), Bengaluru (Karnataka), Rajahmundry (Andhra Pradesh), Varanasi (Uttar Pradesh), Coonoor (Tamil Nadu) and Jagdalpur (Chattisgarh).

- The technical Divisions at the headquarters of the institute are :- Parasitic Disease Dept. , Epidemiology Centre, Zoonosis Department ,Microbiology Dept, Centre for Medical Entomology and Vector Management ,HIV/AIDS and related maladies Centre, Biochemistry and Biotechnology Dept ,Division of Malariology and Coordination .
- In certain department, there are a couple of regions and research focuses overseeing various transferable ailments. The divisions have very much outfitted research offices with most recent innovation for undertaking tests using latest development. It works constant to react to enquiries identified with ailment flare-up alongside video-conferencing office to collaborate with the system of sickness reconnaissance focuses in the states and regions. The branches are in like manner decidedly ready and staffed to finish field considers, preparing exercises and research.

There are various divisions under this organization.

Division and Technical Centre

1. Centre Of Epidemiology

- Development of trained health manpower by coordinating and organizing training courses in epidemiology.
- Giving modules and manuals on malady observation and episode examination of pandemic inclined transferable infection.
- Provide measures for the prevention and control of outbreak of disease.
- Provide technical assistance to different government of state to carry out the investigation and control of disease outbreaks.
- Provides technical assistance to various national health programmes

(2) DIVISION OF MICROBIOLOGY

- Provides lab assistance to various health programs
- Carries out study of microbes
- Perform testing for bacteria in drinking water
- Conducts training and workshops for laboratory personnel.

(3) DIVISION OF ZOONOSIS

- It provides referral diagnostic services for zoonotic diseases
- There are various laboratories under the division of zoonosis .
- It has two centres:- Plague surveillance centre and WHO collaborating Centre

(d) (4) Centre for Medical Entomology and Vector Management

- It includes major activities
- It provides training course on Public Health Entomology
- Trains manpower in vector borne disease
- It carries out Aedes program on Surveillance

(e) Centre for AIDS and related diseases

- External Quality assessment scheme
- It began as a reference lab for AIDS in division of Microbiology
- It carries out CD4 testing on HIV samples
- It performs diagnosis of Syphilis
- It performs quality control testing of HIV, HBV and HCV
- It received NABL accreditation as per ISO

(f) Division of Biochemistry and Toxicology

- It monitors National Public Health Programme
- It has two different committees

- Training need assessment is carried out at National, state and district level public health lab
- Research is priority in medical and public health biochemistry

(g) Division of Parasitic Disease

- It carries out continuous surveillance in post-eradication phase
- It monitors efficacy of anti-helminthic drug
- It performs disease and morbidity management

(h) Division of Malariology and coordination

- It aids in technical assistance for outbreak investigation
- It carries out operational research
- It conducts short-term orientation and conferences
- It provides diagnostic support

(i) Centre for Environmental and Occupational Health and Climate Change and Health

- It creates awareness related to environmental-occupational health
- It provides technical support to Centre and State government
- It builds adaptation capacity to climate change

(j) Centre for Non-communicable disease

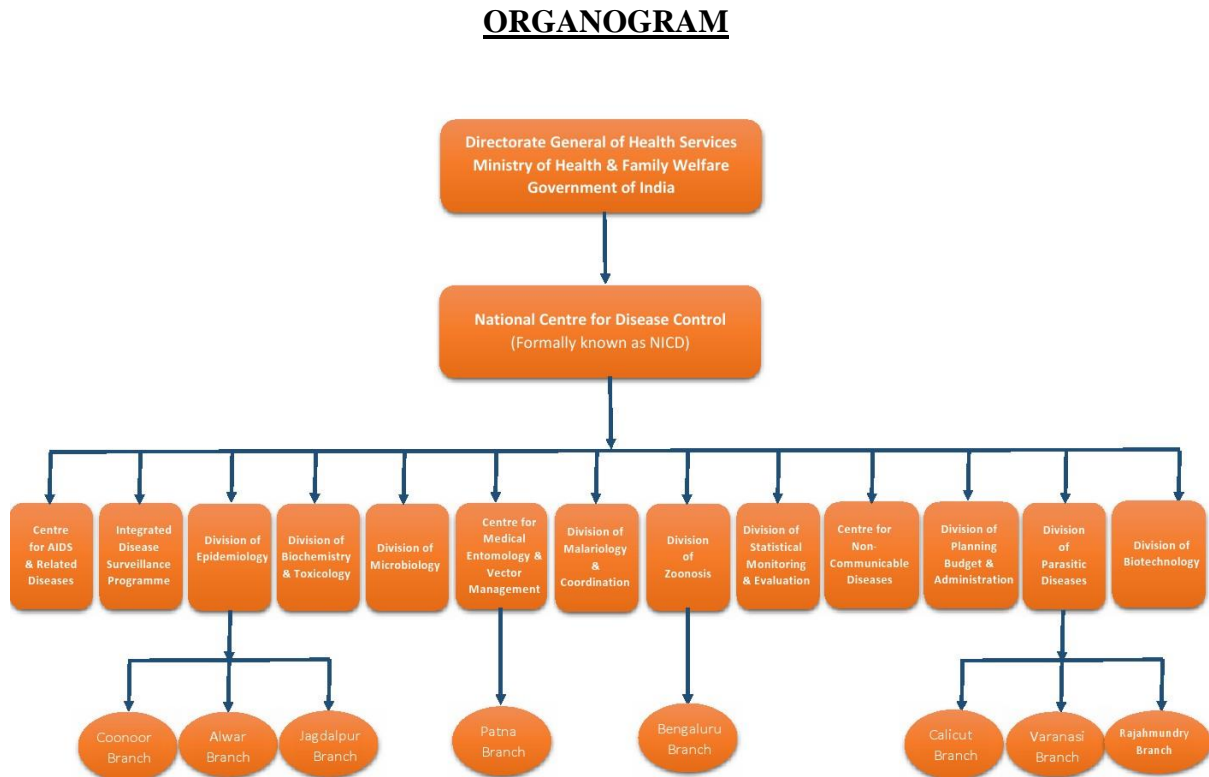
- It provides technical support to prevention and control of cardiovascular disease, diabetes, cancer, stroke
- It carries out surveillance, monitoring and evaluation

(k) Statistical monitoring and evaluation centre

- It conducts training Programme of Statistics

- It carries out training Programme of Biostatistics
- It provides statistical support to all division
- Weekly reports on Cholera and H1N1 cases are prepared with its help

The organogram that the organization has is showed below as:-



LEADERSHIP

At present the director of the organization is **Dr. Sujeet Kumar Singh (2018-present)**

List of Director since the organization was developed in 1909.

Sir Richard Christophers 1909-1927	Brigadier J.A. Sinton 1927-1936	Major General Sir Gordon Covell 1937-1947
Lt. Col. Jaswant Singh 1947-1957	Dr. B. Ananthaswamy Rao 1957-1958	Dr. S. P. Ramakrishnan 1958-1965
Dr. J. B. Srivastav 1965-1967	Dr. N. G. S. Raghavan 1965-1971	Dr. M. I. D. Sharma 1971-1976
Dr. R. K. Sanyal 1977-1979	Dr. Sharad Kumar 1979-1981	Dr. A. N. Raichowdhury 1981-1984
Dr. R. N. Basu 1984-1986	Dr. P. N. Sehgal 1986-1987	Dr. P. C. Roy 1989-1989
Dr. T. Verghese 1990-1994	Dr. K. K. Datta 1994-1997 & 2000-2001	Dr. Jotna Sokhey 1997-2000
Dr. Shiv Lal 2002-2010	Dr. L. S. Chauhan 2010-2014	Dr. S. Venkatesh 2014-2017
Dr. A.C. Dhariwal 2017-2018	Dr. Sujeet Kumar 2018-	

There are various health programmes that the organization is part of or which are started by the organization. These include:-

National Health Programs

- **Yaws Eradication Programme** was at first began as a supported plan in 1996-97 of every a region of Orissa which later extended and secured ten states.

The principle point was to arrive at the un-came to tribals locale of the nation.

NCDC is responsible for planning, monitoring and evaluation of programme.

To make this programme more effective various strategies are adopted that includes-

- (a) Finding of cases,
- (b) Treating cases,
- (c) Manpower development,
- (d) IEC activities,
- (e) Rumor reporting and
- (f) Multi-sectoral approach.

•**Integrated Disease Surveillance Program (IDSP)** was begun as a team with World bank help with November 2004 and went on for a long time. Later it was additionally stretched out for a long time till March 2012. In present, this program does observation for 18 flare-up inclined ailment. The significant parts of this program are :-

- (a) Starting of observation units at Center, State and District level
- (b) Carrying out preparing of State and District Surveillance officials, Rapid reaction Team and clinical, paramedical staff engaged with sickness reconnaissance.
- (c) Collection, grouping, aggregation, investigation and scattering of information utilizing IT.
- (d) Builds and keep up general wellbeing research centers.
- (e) Coordination for zoonotic maladies
- (f) At NCDC, Central Surveillance Unit is put.

Routinely information is gathered under IDSP on scourge inclined sicknesses on week after week premise. Also the information is accounted for in group as – "S" for example suspected cases, "P" is possible cases and "L" is research center affirmed cases. The report is filled by wellbeing laborers, clinician and Laboratory staff. The report gives information on pattern of infection. In the event that there is ascend in instances of maladies, at that point it is taken care of by Rapid Response Team.

- **Guniea Worm Eradication Programme.**:-The role of NCDC is to keep watch on Gunieaworm cases. Guniea was declared eradicated in the year 2000.
- **National Filaria Control Programme** is also under NCDC. Filariasis is a common disease caused by three species of parasitic worm. Hence, they carry activities like Training Programme on Elimination of Lymphatic Filariasis, Research and Treatment to eliminate Lymphatic Filariasis and Morbidity management and examination of blood smear at clinics.
- **Supporting National Dewarming worm** was launched in 2015. The main aim was to prevent soil-transmitted helminthiasis i.e. commonly called as intestinal worm and is the main source of infection all over the world.
- **Containment of Anti-Microbial Resistance (AMR)** does reconnaissance with assistance of ten on four bacterial pathogens of general wellbeing significance which are Enterococcus species, Escherichia coli, Staphylococcus aureus and Klebsiella. Three progressively bacterial pathogens are included for example Salmonella, Pseudomonas and Acinetobacter. It incorporates
 - (a) Development of National Action plan (NAP)
 - (b) IEC exercises where a promotion is set in paper to make mindfulness in network
 - (c) IEC exercises for making mindfulness for legitimate utilization of medications for general professionals, clinicians and attendants.
 - (d) Rules to control hospital infection

Three advisory groups have been shaped to create National activity plan. These are:-

- (a) Core Working Group with every single applicable partner as the individuals who will meet oftentimes (month to month) under the chairmanship of Director NCDC.
- (b) Specialized admonition Group under the joint chairmanship of Indian Council of Medical Research (ICMR), D.G and DGHS.
- (c) Inter-sectoral coordination Committee from different administrations like

Agriculture, Animal Husbandry, Environment and Finance under the chairmanship of health secretary.

Prevention and Control of Viral Hepatitis in India was started with the objective of:-

- (a) Detection of flare-ups
- (b) Estimate the extent of constantly tainted people
- (c) Estimate the rate of HCC and cirrhosis
- (d) Estimate the weight of incessant contaminations
- (e) Numerous noteworthy open doors for mediation
- (f) Describe inclines in type-explicit intense hepatitis and distinguish chance variables

➤ To achieve this objective various activities are undertaken:-

- a. Procurement of kits and equipment
- b. Assessment of Laboratories under the National Viral Hepatitis Surveillance
- c. Establishment of network of Laboratories for surveillance
- d. Carrying Viral Hepatitis Surveillance from NACO, ICMR, WHO and CDC.
- e. Recruitment of Manpower on contract basis
- f. Formation of Technical Resource Group (TRG) involving Epidemiologist, Microbiologist, Gastroenterologists and agents from CDC, ICMR, NACO, WHO

National Rabies Control Programme was started to control rabies. It is an endemic. The major problem is dog rabies that is a public issue. The control of rabies incorporates human wellbeing and creature wellbeing segment. The human wellbeing incorporates populace study of canines, mass immunization of mutts, hound populace the board and fortifying

reconnaissance. Moreover IEC exercises and Laboratory fortifying of five research facilities will likewise be directed.

Prevention and Control of Leptospirosis Coordinator is general clinical issue in Gujarat, Karnataka, Tamil Nadu, Kerala, Maharashtra and Andaman. This program is being actualized in six endemic states. It incorporates fortifying of diagnostics labs for early conclusion, reinforcing of patient administration offices, prepared labor advancement, reinforcing of between sectoral coordination and make mindfulness as a rule network.

Intersectoral Coordination for Prevention & Control of Zoonotic Diseases was directed in Jan-Oct 2016. This program incorporates fortifying instrument of between sectoral co-appointment using existing observation arrangement of IDSP for assortment and resemblance of creature sickness information for setting up early notice signals, prepared labor advancement, sharpening of experts in different parts and IEC to make mindfulness among network.

Support to National Polio Surveillance Coordinator was assigned to NCDC to complete strengthening observation by gathering sewage tests on week by week premise.

Global Health Security Agenda (GHSA) is valuable for anticipation against developing and reappearing diseases. NCDC is liable for subsidizing of nine undertakings.

- (a) EIS training
- (b) Prevent AMR
- (c) Work on zoonotic diseases
- (d) Carry out bio-risk management training
- (e) Works on influenza strengthening lab
- (f) QMS lab in IDSP labs
- (g) Seeks viral hepatitis surveillance
- (h) Emergency management
- (i) Strengthen management capacity of IHR in India

FUNCTIONS

Some other functions of NCDC:-

- (a) Countrywide Surveillance of Epidemic
- (b) Outbreak Investigation
- (c) Referral Diagnostic Support Services
- (d) Quality Control Of Biologicals
- (e) Entomological Investigation

NCDC plays out the arrangement of work to highlight the execution of different prosperity programs all through the country. The timetable is aptitudes reliant on need. The people who take an interest are from various States/Union Territories of India. Understudies are from nations like North Korea ,Bangladesh, Sri Lanka, , Bhutan, Nepal, Myanmar , Timor Leste and Maldives besides partake in the status programs. The NCDC has changed preparing ventures for general people. These are bolstered by WHO,UNICEF, CDC and USAID.

Preparing programs completed by NCDC are:

1. India EIS Program

The essential spotlight is on epidemiologic help for general prosperity specialists. Students are locked in with scene assessment, organizing and analyzing epidemiological examinations, examination and appraisal of perception data, coherent correspondence.

2. MPH (FE) Course

NCDC has a course in Master in Public Health (Field Epidemiology) .

3. Regional Field Epidemiology Training Program (FETP)

A project is made for the center and higher level thriving work power from nations of the regions of the South East Asia Region. It is a multi month program. It is driven once consistently.

APPLIED RESEARCH

Applied research is accomplished for both transferable and non-transmittable diseases. The basic issue of research combine, Dengue, , Filaria Diphtheria, Cholera, Fungal contaminations, Influenza , HIV/AIDS, Soil Transmitted Helminthis, Leptospirosis ,Kala-azar, , Malaria, Scrub Typhus , Meningitis, Measles Rabies, Rubella, Tuberculosis , Hepatitis JE , and Zika Virus Disease, and so forth.

The association issue the Citizen's Charter. It improves the nature of open administrations. It assists with authorizing existing rights. Protest which is gotten on the entrance will be passed to explicit offices. A Grievances Officer in the foundation is delegated to investigate the complaints .There is additionally a facilitator who arranges all the exercises with explicit offices.

The National Centre for Disease Control (NCDC) has various departments working for both communicable and non-communicable diseases. The division of zoonosis is one such department under NCDC. The Division of Zoonotic Disease Program is a technical division of NCDC.

The destination of the division is to offer specialized help for episode examinations and lead operational research and prepared labor advancement in the field of zoonotic illness and their control in the nation. Indicative help is given to the state government to research centre analysis of zoonotic diseases of general well-being importance. The Division has Reference Laboratory for Plague. It has likewise been perceived by the World Health Organization as WHO Collaborative Centre for Rabies.

Plague, Rabies, Kala-azar, Arboviral infections (Dengue, JE, Chikungunya, CCHF), Toxoplasmosis, Leptospirosis, Rickettsiosis, Anthrax, Brucellosis and Neurocysticercosis. There are various activities undertaken in the year 2016-17. These are:-

- 1) Implementation of National Programmes
- 2) WHO collaborative Centre for Rabies Epidemiology
- 3) Outbreak Investigation
- 4) Teaching and Trainings
- 5) Operational Research

The services can be described as:-

- 1) Referral Diagnostic Services

For **Rabies**, it includes

- Post-mortem diagnosis in animal brain sample
- Assessment of anti-bodies by ELISA test in :- Humans and animals
- Diagnosis in hydrophobia cases

For **Kala-azar**,

- Parasitological diagnosis by smear and culture
- Serological diagnosis by IFA

For **Toxoplasma**

- Serological diagnosis by IFA

For **Brucellosis**

- Serological diagnosis by tube agglutination test

For **Rickettsiosis**

- Serological diagnosis by Weil Felix test

For **Hydatidosis**

- Serology by ELISA

For **Hanta Virus**

- Serological diagnosis by IgM, IgG and ELISA

For **Lyme Disease**

- Serological diagnosis by IgM, IgG and ELISA

For **Arboviral Diseases**

- Serological diagnosis by IgM ELISA
- Human Sera Sample
- Human CSF
- IgM ELISA test for Dengue
- IgM ELISA test for Chikungunya

For **Plague**

- Culture for isolation
- Serological diagnosis by PHA and PHI in rodent Sera

For **Neurocysticercosis**

- Serological diagnosis by ELISA

For **Leptospirosis**

- Serological diagnosis by ELISA

The list of viral isolation include:-

- (a) Dengue
- (b) Chikungunya
- (c) Rabies

- (d) Lymes Disease
- (e) Hanta Virus

2) Training Groups

- Various training courses on public health are organized.
- Various committees are organized.
- Various seminars are organized to educate and train people.

(C) Workshops

- Various workshops are organized related to emerging and re-emerging infections. Moreover training related to laboratory aspect during Health Emergency International Concern is also organized.

(D) Teachings

Teaching related to Epidemiology, community medicine and microbiology is organized.

(E) Other Responsibility

Apart from all this department has various other roles. These include:-

- Vigilance
- Purchase Committee
- Stage Management and Decoration Committee
- Purchase Committee
- Biomedical Waste Management
- Equipment Maintenance
- Physical Verification
- Participation in NCDC upgradation

There are various National Programmes implemented under this division. These are:-

- 1) Coordination of inter-sectoral for Prevention and control of zoonotic diseases
- 2) National Programme on Rabies Control

3) Leptospirosis Prevention and Control Programme

Rabies

It is a communicable disease. It is endemic throughout the country. 96% reason for mortality and bleakness is because of pooch rabies which is a significant general wellbeing program. The control of rabies include two sections Human wellbeing part and Animal wellbeing segment. The human wellbeing segment incorporates preparing wellbeing proficient, includes utilization of intradermal antibody and utilization of immunoglobulins. The human wellbeing methodology is executed all through the nation. This incorporates populace overview of canines, mass inoculation of pooches, hound populace the board and observation.

The pilot testing being done in Haryana and Chennai. Also IEC is being tried and completed. Likewise the individuals who are the casualties of pooch chomp are properly overseen therefore diminishing human mortality.

To address the issue of rabies in the country, National Rabies control Programme was approved by standing Finance committee. The objectives include:-

- Training of Health Care experts on proper Animal nibble the board and Rabies Post Exposure Prophylaxis.
- Advocacy for states to receive and execute Interdermal course of Post introduction prophylaxis for Animal chomp Victims and Pre presentation prophylaxis for high hazard classes.
- Likewise the individuals who are the casualties of pooch nibble are suitably overseen along these lines diminishing human mortality.
- To address the issue of rabies in the nation, National Rabies control Program was endorsed by standing Finance board.
- Creating mindfulness in the network through Advocacy and Communication and Social Mobilization. Under this programme the exercises led in Jan-Oct 2016 are:-

(A) Human Component

- MoU set apart with 6 States , so far supreme 25 States and 5 UTs have denoted the MOU
- Nodal Officers perceived from 7 States. So far full scale 26 States and 5 UTs have perceived SNOs.
- Operational rules for National Rabies Control Program streamed to State Nodal Official.
- Training of Master Trainers on Animal Bite Management and ID course of Rabies Post Introduction Prophylaxes.
- On 28th Sep 2016, World Rabies Day is praised. A Scientific symposium on subject "Rabies to instruct and inoculate.
- Mass media fight for rabies care impelled through paper advancement on World Rabies Day.
- Base line data as for status of existing workplaces on animal snack the officials and data about animal snack losses is being gotten from the states and UTs.
- Monitoring of status of utilization of human part and utilization of Grant in help is being grasped.
- Visit to the Haryana to screen the Status of utilization of human part

(B) Creature Component

- Central Team visited Haryana (District Hissar and Fatehabad) to screen the status of usage of creature part . Meeting was likewise held with Principal Secretary, Govt. of Haryana at Chandigarh to examine the issues relate into the execution of creature segment in the State Haryana.
- Review meeting under Special DGHS on 24 May, 2016 to audit the status of execution of creature part in Haryana

Leptospirosis

Leptospirosis is general medical issue in Gujarat, Kerala, Karnataka, Tamil Nadu, and Maharashtra and Andaman. Visit episodes of leptospirosis are being accounted for, overwhelmingly influencing youthful grown-up guys. The ailment is effectively treatable and the mortality is preventable whenever recognized and treated early. Under XII arrangement, Program for Prevention and Control of Leptospirosis is being actualized in six endemic states. The procedure incorporates fortifying of diagnostics labs for early analysis, reinforcing of patient the board offices, prepared labor improvement, fortifying of bury sectoral coordination and make mindfulness when all is said in done network.

The objective of this programme is:-

- Development of trained manpower
- Strengthening the surveillance of Leptospirosis in humans.
- Strengthen diagnostic laboratory in programme states
- Create mindfulness with respect to convenient identification and suitable treatment of patients
- Advocacy for fortifying of patient administration offices in program states
- Strengthening Inter-Sectoral Coordination at state and region level for episode discovery, avoidance and control of leptospirosis

Activities undertaken include:-

- Preparing of Health Care experts on suitable Animal chomp the executives and Rabies Post Exposure Prophylaxis.
- Promotion for states to receive and execute Interdermal course of Post presentation prophylaxis for Animal chomp Victims and Pre introduction prophylaxis for high hazard classifications.
- Fortify Human Rabies Surveillance System.
- Fortifying of Regional Laboratories under NRCP for Rabies Diagnosis.
- Making mindfulness in the network through Advocacy and Communication and Social Mobilization.

Moreover an advisory was also issued in this regard. This advisory was issued for prevention of occurrence of Leptospirosis cases and outbreaks. This states:-

- (1) Undertake IEC activities for awareness in community.
- (2) Organize sensitization workshops and training programmes.
- (3) To alert District Surveillance Unit
- (4) To strengthen diagnostic and case management facility
- (5) To ensure regular supply of drugs
- (6) To be prepared for ambulatory services.

Other activities undertaken include:-

- Observing and survey - Review meeting of State Nodal officials of program states and SSOs of Flood influenced states held on 28th Sept 2018 at NCDC Delhi. States were asked to fortify the exercises under program including leptospirosis observation, improving case management at the field office for patients and facilitating the budgetary use under the program. Territory of Kerala, Gujarat and UT of Andaman and Nikobar have presented the action report, activity plan and reserve use.
- Reconnaissance Regular observation of possible and lab. affirmed instances of leptospirosis is attempted however IDSP and checked under the program.
- Specialized Support to states - Advisory was given in July 2018 under the program from Director NCDC to all flood influenced states on preventive and control measures to be embraced for Leptospirosis. Visit to Mumbai Maharashtra & Karnataka in Aug & Sept 2018 for audit leptospirosis control exercises.
- IEC exercises IEC material (Radio spots and Radio Jingle) under Program for counteraction and control of Leptospirosis (PPCL) was set up through NFDC.
- Intersectoral coordination - Follow up is being finished with states to establish and operationalize state and area level zoonotic boards of trustees for One health for counteraction and control of zoonotic illnesses including leptospirosis.
- Budgetary help to states-Approval from Ministry and IFD for support move adding up to 52 lakh to states (Kerala and Gujarat).

Inter-sectoral Coordination for Prevention and Control of Zoonotic Diseases

The objectives include:-

- To fortify the Inter-sectoral for avoidance and control of Zoonotic ailments of Public Health Importance.
- Fortifying of between sectoral co-appointment between Medical , Veterinary, natural life division and different pertinent partners for avoidance and control of zoonotic infections
- Prepared labor improvement
- Refinement of experts in different segments (I. Clinical , Veterinary and so forth .)
- IEC to make mindfulness among network

The activities undertaken include:-

- Intersectoral coordination- One Health approach is organized at National level. This is done in collaboration with DADF, Ministry of Agriculture and Farmer Welfare (MoA and amp ;FW) for improvement of specialized rules for animal segment of rabies control has been finished.. There is a fundamental gathering on Proposal for marking of MoU between Technical Stakeholders for Strengthening Inter-sectoral Coordination for Prevention and Control of Zoonotic Diseases in India held in February.
- State and District level activities- 14 States have formed State Level Zoonosis Committee (SLZC) for intersectoral coordination to control zoonosis. A zoonosis panel is made comprising of local level board.
- Specialized help exercises- A national multi stakeholder technical workshop is made to coordinate between sectors to avoid and control zoonotic maladies" in Joint cooperation with DADF, Ministry of Agriculture and CDC .
- IEC exercises - Communication was made with all states/UTS to watch World zoonosis day watched for bringing issues to light of clinical and vet. Many states attempted exercises and brought it into the notice of expert and general network.

Bibliography

National Centre for Disease Control" Ministry of Health & Family Welfare, G. o. (2020, April 11). *National Centre for Disease Control*. Retrieved from <https://ncdc.gov.in/index.php>

National Centre for Disease Control" Ministry of Health & Family Welfare, G. o. (n.d.). *National Centre for Disease Control*. Retrieved April 17, 2020, from <https://ncdc.gov.in/index.php>: <https://ncdc.gov.in/index.php>

Comparative Study

For the comparative study, the topic that I studied was:-

Title- Violence towards health workers

Violence towards health workers is a global issue. All over the world health workers face violence. Somewhere in the range of 8% and 38% of health workers endure physical brutality sooner or later. Much more are undermined or introduced to verbal hostility. Most violence is executed by patients and visitors. Moreover in a failure and struggle conditions, wellbeing laborers may transform into the goals of gathering or political brutality. Arrangement of health workers mostly in danger are involved in paramedics, patient care and emergency staff room. Violence against anyone is unacceptable. It has not only a negative impact on the psychological and physical success of restorative administrations staff, yet moreover impacts their movement motivation. This act of violence influences the life of health workers and puts their life at a hazard. It likewise prompts tremendous money related misfortune in the health sector.

Objective- To review and compare studies that focus on the violence against health workers in Islamic countries.

Methodology-

- Research Design- Literature review based study
- Search strategy- Databases searched= Google scholar, NCBI, Research gate
- Keywords- = violence, healthcare workers, Saudi Arabia, physical violence, Palestine, hospitals, physician and nurses, sexual violence, Middle East, verbal violence, occupational hazards, workplace violence, survey, emergency hospital.
- Time Period- 1999 to 2018

The **5 articles** that were reviewed were based on geographic distribution across Islamic countries .The **parameters** considered were

- objective,
- research methodology,
- study population,
- criteria and
- time frame of study.

Authors	Country	Objective	Methodology	Time Horizon	Study population and criteria
Safar A Alsaleem, Reema S Almari, Abdullah Alsabaani, Mona H Alkhayri, Almozn G Badawi, Abdulrahman M Al- Bishi, Abdulazi A Alshehri, Kholoud K Badawi,	Saudi Arabia	In Abha city, Saudi Arabia a study conducted regarding violence against healthcare workers	Cross- sectional study design	2018	Sample size= 738 healthcare workers Inclusion Criteria From 2 government hospitals and 10 primary healthcare centers comprising of nurses, pharmacists, dentist, physician,

					<p>technician, pharmacist specialist, psychologist and social workers who are willing to participate.</p> <p>Exclusion Criteria</p> <p>Health workers who are not willing to participate.</p>
Motasem Hamdan, Mohamad Kitaneh	Palestinian	A study conducted regarding violence in workplace against physicians and nurses in Palestinian public hospitals.	Cross- sectional study design	2011	<p>Sampl size= 271 health workers</p> <p>Inclusion Criteria</p> <p>Physician and nurses were selected by random sampling</p>

					Exclusion Criteria Those who were not selected by random sampling.
David Chinitz, Sigal Shafran Tikva, Revital Zelker	Israel	A systematic analysis of the workplace violence, the type of violence, the perpetrators and hospital department in a tertiary care hospital at Israel.	Questionnaire based study	2017	Sample size= 678 health workers Inclusion Criteria Nurses physicians and who were willing to take part. Exclusion Criteria Nurses and physicians who were not ready to take part.

Salim M Adib, Shadia Kamal, Ahmad K al- Shatti, Mariam Al- Raqem, Najwa El- Gerges	Kuwait	Violence in healthcare settings in Kuwait among nurses	Cross- sectional study design	1999	<p>Sample= 5876 nurses</p> <p>Inclusion Criteria</p> <p>Nurses who were registered in Kuwait and who responded.</p> <p>Exclusion Criteria</p> <p>Nurses who were not ready to take part.</p>
El- Sallamy R, Kabbash IA	Egypt	In an emergency hospital in Egypt the violence against healthcare workers	Cross sectional study design	2017(Septembe r)- 2018 (April)	<p>Sample= 340 physicians and nurses</p> <p>Inclusion Criteria</p> <p>Participants were selected who were ready to participate and have at least 6 months</p>

					<p>of work experience were chosen for systematic sampling technique.</p> <p>Exclusion Criteria</p> <p>Not interested in participating and did not have work experience</p>
--	--	--	--	--	---

Discussion-

- All the research articles were thoroughly studied. The fundamental thought of all the paper was to understand the reason behind workplace violence and the consequences faced by the workers.
- Physical assault, verbal threats and harassment were the type of violence faced by health workers.
- One of the study reveals that verbal violence is more common than physical one.
- The consequences of the current examination indicated that the culprits of viciousness were principally patients or their family members.
- A study shows that the he reasons for violence as saw by the tested health workers were the absence of instruction and long holding up time, trailed by culture and

character, staff deficiency, overcrowding, outstanding task at hand and absence of security.

- Violence is mainly observed during night shifts.
- The type of violence varies among nurses and physicians and among different departments in hospitals.
- One of the study suggests that healthcare professionals who have less experience are at more risk of violence.
- Another study claims that mostly female staff is at a greater threat of - sexual and verbal violence.
- Therefore, it is very clear that violence is very common against healthcare workers. Hence they should be prompted, prepared, and urged to report episodes of savagery either against them.
- Moreover the relatives of patients and patients itself should be taught regarding rights and policies of patients.
- Rules and regulations regarding violence should be set at workplace.
- There should be intervention at workplace to protect the healthcare workers.
- The other important thing is communication. It should be used as a good tool both by health workers and patients and their relatives.
- Improvement might be normal with better correspondence with, and instruction of, patients directed by either specialists or head medical attendants.

References

David Chinitz, S. S. (2017). Workplace violence in a tertiary care Israeli hospital - a systematic analysis of the types of violence, the perpetrators and hospital departments. *Israel Journal of health policy research*. Retrieved from <https://ijhpr.biomedcentral.com/articles/10.1186/s13584-017-0168-x>

El- Sallamy R, K. I. (2017-2018). Violence against healthcare workers in emergency hospital, Tanta University, Egypt. *Egyptian Journal of Occupational Medicine*.

Retrieved from

<https://pdfs.semanticscholar.org/1ece/74e1cd1b0850421f20ae263d401debaa657b.pdf>

Motasem Hamdan, M. K. (2011). Workplace violence against physicians and nurses in Palestinian public hospitals: a cross-sectional study. *BMC health services research*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3541970/>

Safar A Alsaleem, R. S.-B. (2018). Violence towards healthcare workers: A study conducted in Abha City, Saudi Arabia. *Journal of family and Community medicine*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6130164/>

Salim M Adib, S. K.-S.-R.-G. (1999). Violence against nurses in healthcare settings in Kuwait. *International Journal of Nursing Studies*. Retrieved from https://www.researchgate.net/publication/11454018_Violence_against_nurses_in_healthcare_settings_in_Kuwait

Literature based report

Introduction

Chronic obstructive pulmonary disease (COPD) is a lung infection described by constant impediment of lung wind stream that meddles with ordinary breathing and isn't completely reversible. COPD for the most part advances with time and is related with chronic inflammatory response in the lung and airways.

The main source of COPD is cigarette smoking. Aside from this drawn out presentation to lung aggravations like air contamination, substance exhaust and vapor additionally add to COPD.

Emphysema and constant bronchitis are the two most basic conditions that add to COPD. The primary indications incorporate hack with sputum and brevity of breath which for the most part declines with time. COPD patients have expanded danger of creating coronary illness, lung malignant growth and an assortment of different conditions.

Chronic bronchitis prompts compounding wind current deterrent by luminal check of little aviation routes, epithelial rebuilding, and adjustment of aviation route surface pressure inclining to crumple which is brought about by overproduction and hypersecretion of bodily fluid by cup. It causes incessant hack and intermittent increment in bronchial emissions. The emissions are available pretty much consistently for a time of a quarter of a year in a year, for at any rate two back to back years.

Emphysema is one of the infections that include COPD. It is a long haul, dynamic sickness of the lungs with ruinous growth of airspaces distal to terminal bronchiole which is changeless without evident fibrosis. It includes the loss of versatility and development of the air sacs in the lung. The alveoli toward the finish of the bronchioles of the lung become extended on the grounds that their dividers separate or the air sacs are decimated, limited, fallen, extended, or over-swelled. This outcomes in eased back or halted trade of gases during breathing because of practically zero development of gases out of the alveoli.

Rationale

More than 5 percent of the population is affected by COPD. COPD is also associated with high morbidity and mortality. It causes considerable social burden. It also causes unfavorable

outlook in terms of prevalence and mortality in coming decade. Smoking cigarettes and inhalation of other noxious particles such as smoke from biomass might lead to inflammation. Cases of COPD are increasing day by day in our own country India. It not only causes disability but the death of patient as well. The disease is associated with various risk factors and comorbid conditions.

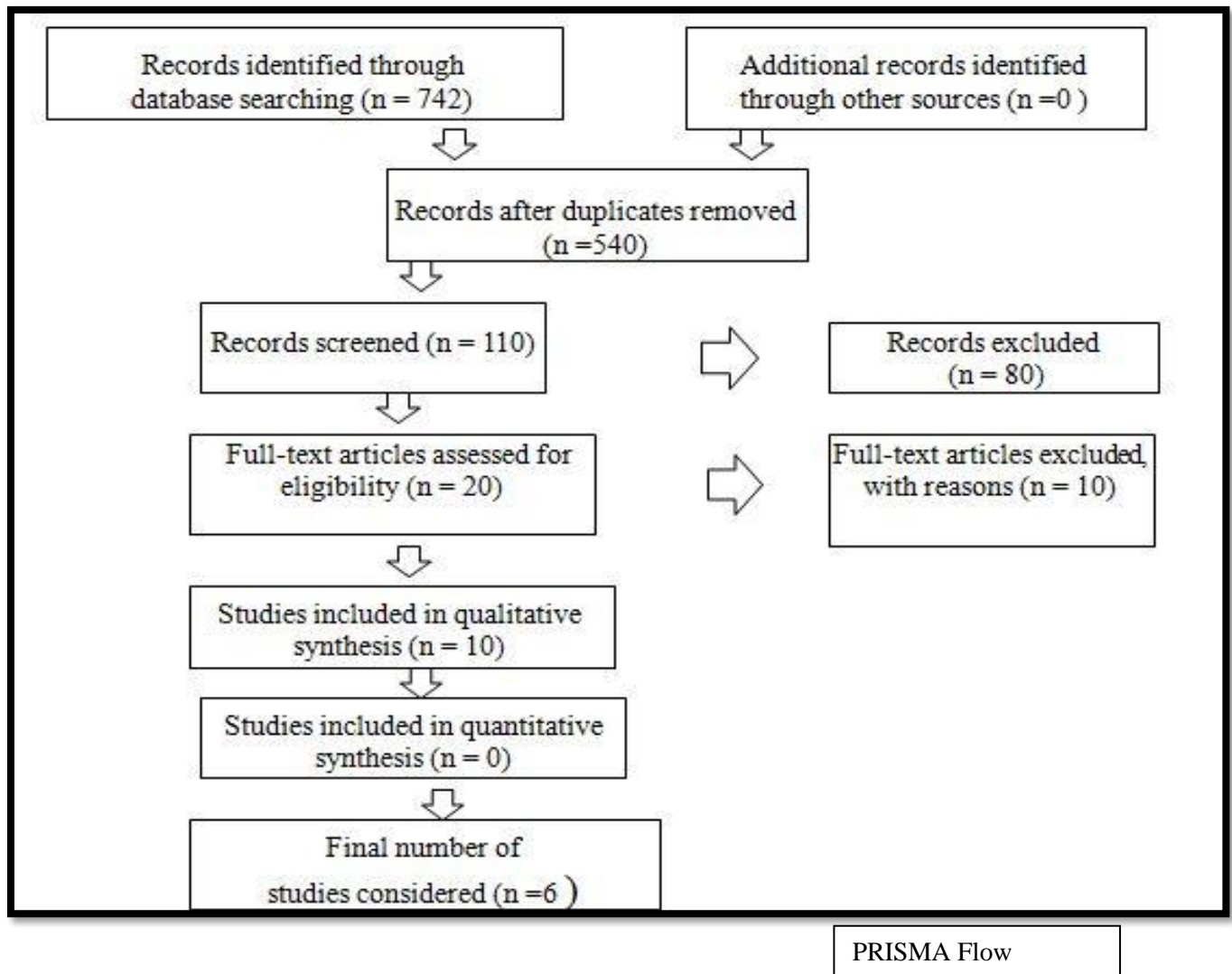
Research Question

My research question is assess the risk factors leading to COPD and the knowledge regarding the disease in such patients in India.

Objective

The aim of the study is to (a) To find out the COPD causing risk factors

(b) To find out the awareness regarding COPD



Methodology

- Research Design- Literature review based study
- Search strategy- Databases searched= Google scholar, NCBI, Research gate
- Keywords- COPD, knowledge, awareness, non-communicable disease, risk factors
- Inclusion Criteria- The research papers that were considered for review purpose included :-
 - (a) Time – Only research papers/Journal published after 2009 were considered
 - (b) Location – India

Objective	Author	Design	Study population and Criteria	Findings
Validation of a structured questionnaire for COPD and prevalence of COPD in rural area of Mysore: A pilot study	PA Mahesh, BS Jayaraj, ST Prahlaad, SK Chaya, AK Prabhakar, AN Agarwal, SK Jindal	Cross-sectional study	Inclusion criteria is Patients suffering from COPD in village of Mysore district. For sample size 105 patients were taken.	Smoking is major cause of COPD. It is more prevalent in males than females.
Awareness in patients with COPD about the disease and pulmonary rehabilitation: A survey	Raksha Thakrar, Gopala Krishna Alaparthi ad R Anand	Cross-sectional study	Inclusion criteria is patients from Kasturba Medical College were considered for study and those who were interested to be a part of it. For sample size, out of 300 only 282 who responded were included in the study.	Smoking is a major factor leading to COPD. Hence, more prevalent in males than females. Majority patients were unaware of the disease

				COPD that they were suffering from.
Assessment of knowledge, attitude, and behavior about the disease process and physiotherapy management in patients with chronic obstructive pulmonary disease: A qualitative study	Ashish Gupta, Vinod Ravaliya, Daxa Mishra, Vyoma Dani, Chandni Sodawala, Hardi Shah, Disha Patel	Cross-sectional study design	Inclusion criteria is COPD patients from Shree Krishna Hospital were taken. For sample size, 14 patients were chosen by convenient sampling.	Very few patients were aware about the term COPD
A Study on awareness of chronic obstructive pulmonary disease(COPD) among smokers	Nilay N Suthar , Khushali L Patel , Jainam Shah	Exploratory observational study design	Inclusion criteria is patients till age 59 were considered for study. For sample size, 230 participants were taken	Majority of them had no basic knowledge about COPD. Smoking in any form- cigarette,

				bidi, tobacco is a biggest risk factor.
--	--	--	--	--

An epidemiological profile of chronic obstructive pulmonary disease: A community-based study in Delhi	B Sinha, Vibha, R Singla, R Chowdhury	Cross-sectional study design	For inclusion criteria patients were taken from 8 wards during January 2012 to June 2013 For sample size 120 patients were taken	Smokers suffer from COPD. Men have high prevalence of COPD.
Prevalence and etiological profile of chronic obstructive pulmonary disease in nonsmokers	Tariq Mahmood, Ravindra Kumar Singh, Surya Kant, Amitabh Das Shukla, Alok Chandra, Rajneesh Kumar Srivastava	Cross-sectional study design	Inclusion criteria is patients from MLN Medical College, Allahabad were taken. Sample size is 200 patients were taken for study after screening 315 patients.	Patients suffering from COPD were both smokers and non-smokers. Variation is seen among non-smoking COPD patients

Discussion

COPD occurs gradually. It is an irreversible disease and occurs silently in initial stages.

Less than 50% of the patients suffering from COPD have knowledge about the disease.

COPD is mainly confused with lung disease by many. Smoking being a prime and major factor that causes COPD. Hence, the disease is more prevalent in males rather than females. It is also observed in many non-smokers as well. Proportion of COPD in nonsmokers among all COPD patients in India shows wide variation. There are many COPD patients who suffer from COPD but realize it at a later stage. COPD is also accompanied with mild to severe symptoms. COPD does not occur alone. It occurs with various other comorbidities.

Conclusion

COPD is a non-communicable disease that leads to both mortality and morbidity. The community should be educated about COPD. Not only this emphasis should be laid on importance of smoking cessation and prohibition of smoking in public places to reduce ETS exposure. There are multiple risk factors that cause development of COPD other than smoking. Hence effective health education programs should be started. There should be improvement in quality of care. There should be issue of proper guidelines to improve healthcare processes and outcomes. Trained health workers should train patients suffering from COPD regarding self improvement strategies to have a better life.

Bibliography

- Ashish Gupta, V. R. (2019). Assessment of knowledge, attitude, and behavior about the disease process and physiotherapy management in patients with chronic obstructive pulmonary disease: A qualitative study. *Journal Of Education and Health Promotion*. Retrieved from <http://www.jehp.net/article.asp?issn=2277-9531;year=2019;volume=8;issue=1;spage=15;epage=15;aulast=Gupta>
- B Sinha, V. S. (2017). An epidemiological profile of chronic obstructive pulmonary disease: A community-based study in Delhi. *Journal Of POG Graduate Medicine*. Retrieved from <http://www.jpgmonline.com/article.asp?issn=0022-3859;year=2017;volume=63;issue=1;spage=29;epage=35;aulast=Sinha>
- Nilay N Suthar, K. L. (2015). A Study on awareness of chronic obstructive pulmonary disease(COPD) among smokers. *National Journal Of Community Medicine*. Retrieved from http://njcmindia.org/uploads/6-4_547-553.pdf

PA Mahesh, B. J. (2009). Validation of a structured questionnaire for COPD and prevalence of COPD in rural area of Mysore: A pilot study. *Lung India*. Retrieved from <http://www.lungindia.com/article.asp?issn=0970-2113;year=2009;volume=26;issue=3;spage=63;epage=69;aulast=Mahesh>

Raksha Thakrar, G. K. (2014). Awareness in patients with COPD about the disease and pulmonary rehabilitation: A survey. *Lung India*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3999672/#:~:text=Awareness%20about%20the%20causes%20of,was%20reported%20by%20only%206.2%25>.

Tariq Mahmood, R. K. (2017). Prevalence and etiological profile of chronic obstructive pulmonary disease in nonsmokers. *Lung India*. Retrieved from <http://www.lungindia.com/article.asp?issn=0970-2113;year=2017;volume=34;issue=2;spage=122;epage=126;aulast=Mahmood>