Summer Training Presentation

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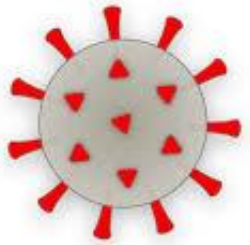
HM Batch – 24

TITLE

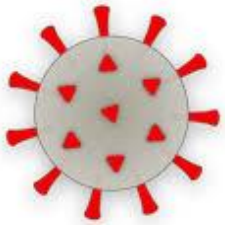
A Comprehensive Analysis of COVID-19 Outbreak Situation In Haryana , INDIA

INTRODUCTION



- In Haryana the first positive case was confirmed on 17th march , by ministry of health and family welfare Then after that case is rising daily and Haryana government Announce the Novel corona virus epidemic many people have the travelling history in last 14 days or so and some them are having international travel history and they are been suspected of this disease.
- All those people who could any symptoms were advised to must isolate themselves in home and avoid any physical contact for two weeks at least. People are advised to cover their mouth with mask and taking some major precautions.
- Till 31stmarch there were 23 passengers with the travel history from an affected country in various district of Haryana like Ambala, Faridabad, Gurugram, Sirsa ,Rohtak, Karnal, Panchkula , Hisar, Kaithal cases were admitted, out of which 20 have been discharge as result their report was negative. However, they are still under surveillance at home, according to protocol.

Literature Review



I) COVID 19 in India- Strategies to combat from combination threat of life and livelihood

- Balaji Krishna kumar
- Sravendra Rana
- (University of petroleum & energy studies, Dehradun)
- Published on – 28th march, 2020

Conclusion – Current situation of COVID in India in recent times, it would more severe & cases will be increasing rapidly in the next few months. Government decide to isolation is better option for the society. Government has decided to take 10% of their salary from the organization in both public and private sectors. Government distributes grains through public distribution system. Government should make people realize that quarantine & isolation is major fighter against this COVID 19, and to make those guidelines that should easy to follow by the people. Government should provide better healthcare service for the COVID patients, and every doctor, nurses have to take necessary preventive measures before handling the patients.

2) Detection of coronavirus Disease based on Deep Features –

Authors- Prabira kumar sethy, shanti kumari Behera

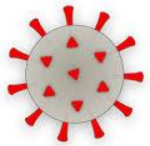
Published on-19thmarch, 2020

Methodology

This deep feature extraction is based on acquired from pre trained CNN. The deep features are extracted from the fully connected layer and feed to the classifier for the training purpose. This deep feature obtained from convolution neural network (CNN) are used by support vector machine (SVM) classifier. After the classification has been performed, the models have been measured.

Conclusion

The context of this manuscript about corona virus is based on the datawhich is available on WHO, European center for disease and control and other official website. The classification model which is ResNet 50 plus SVM is statistically superior to compare with other eight models. The detection model achieved 95.38% of accuracy.



3)Effect of COVID-19 related lockdown on ophthalmic practice and patient care in India: -

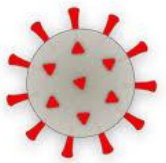
[2] Foresight International, Hyderabad, Telangana, India
[3] Aditya Jyot Eye Hospital, Wadala, Mumbai, India

Published On – 20th April

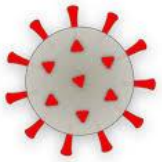
Result

There were 1260 responses were reported till midnight 31st march 2020. There are 61.5% (775/1260) were in private Practioneer with their own clinic & 14.8 % (187/1260) were affiliated to ophthalmic institute , 9.4% (118/1260) , respondents are working in government/ municipal hospitals & approx 2.2% (28/1260) are freelancer surgeons. Around 49.8% government /municipal hospitals were seeing patients as compared to private practice (22.4%)

- 27.5 % which is (347/1260) , were remaining that indicates they are still operating & seeing patients & they were asked to elaborate the case which they were treated-
- 51.9% - common type
- 82.9% - emergency .
- 13.5% - all patients , who come for triage/ screening in the clinic .
- 81.8% - operating only in emergency cases including , trauma , tertial detachment , enolophthalmisis.
- 9.1% - intravitreal injection
- 4.9% - opthalmologies , involved in tumor/ retinoblastoma care
- 12.1% (42/347) only examine emergency not operating.



OBJECTIVES



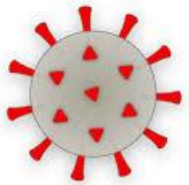
1-) To Study key indicators such as mortality , morbidity , recovery rate of COVID disease in Haryana

2-) To Study the Age sex composition of COVID -19 Patient in Haryana-

3-) To study Corona virus Situation analysis in Haryana state of India

4-) To Enlist the specific measures taken by the Haryana Government nationwide and at community level in Lockdown and Unlock phases

Methodology

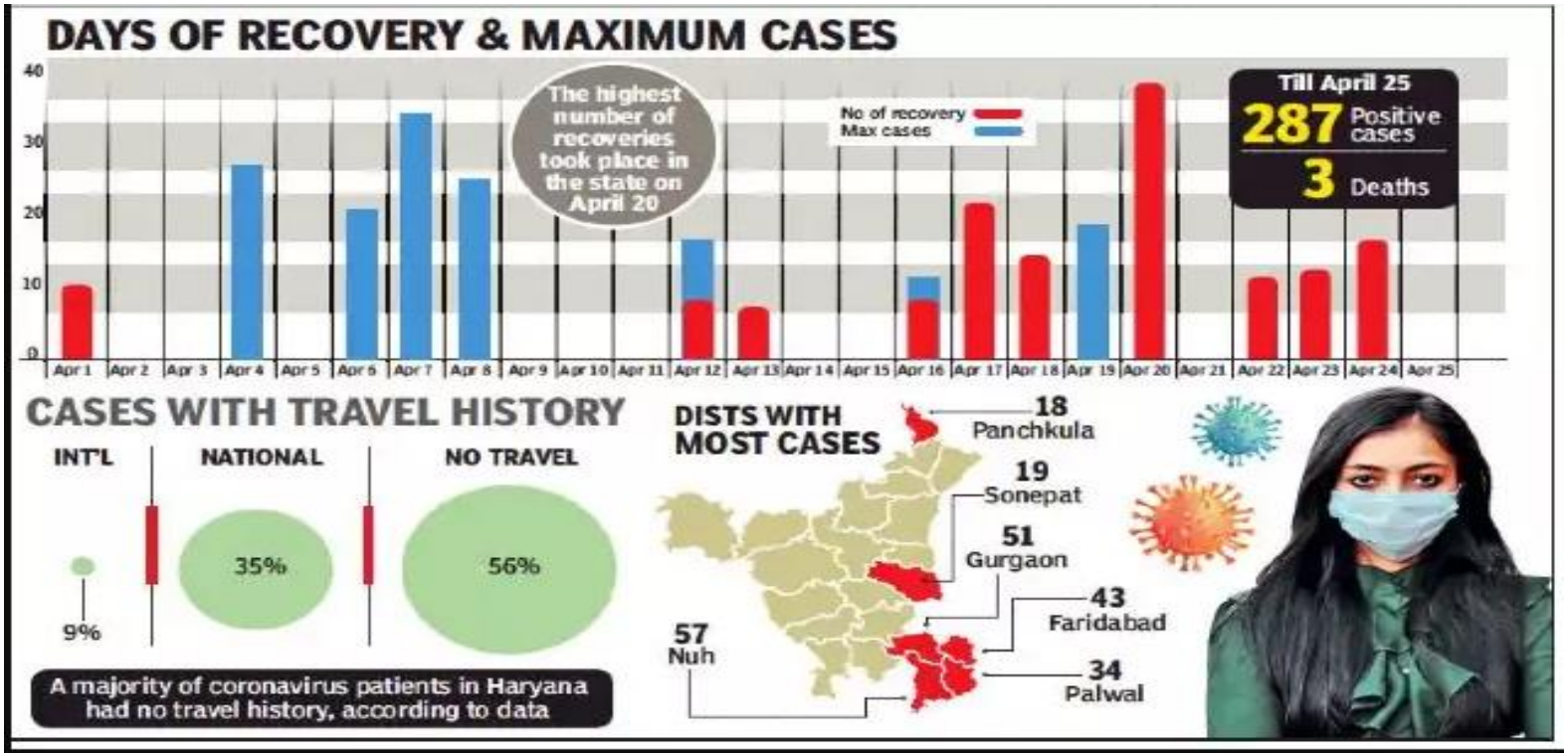


- Study approach – Quantitative Approach
- Research Design – Descriptive Cross sectional study
- Data source - Ministry of health & family welfare , WHO , NHM , Health Department Haryana , etc
- Study Period – April – June

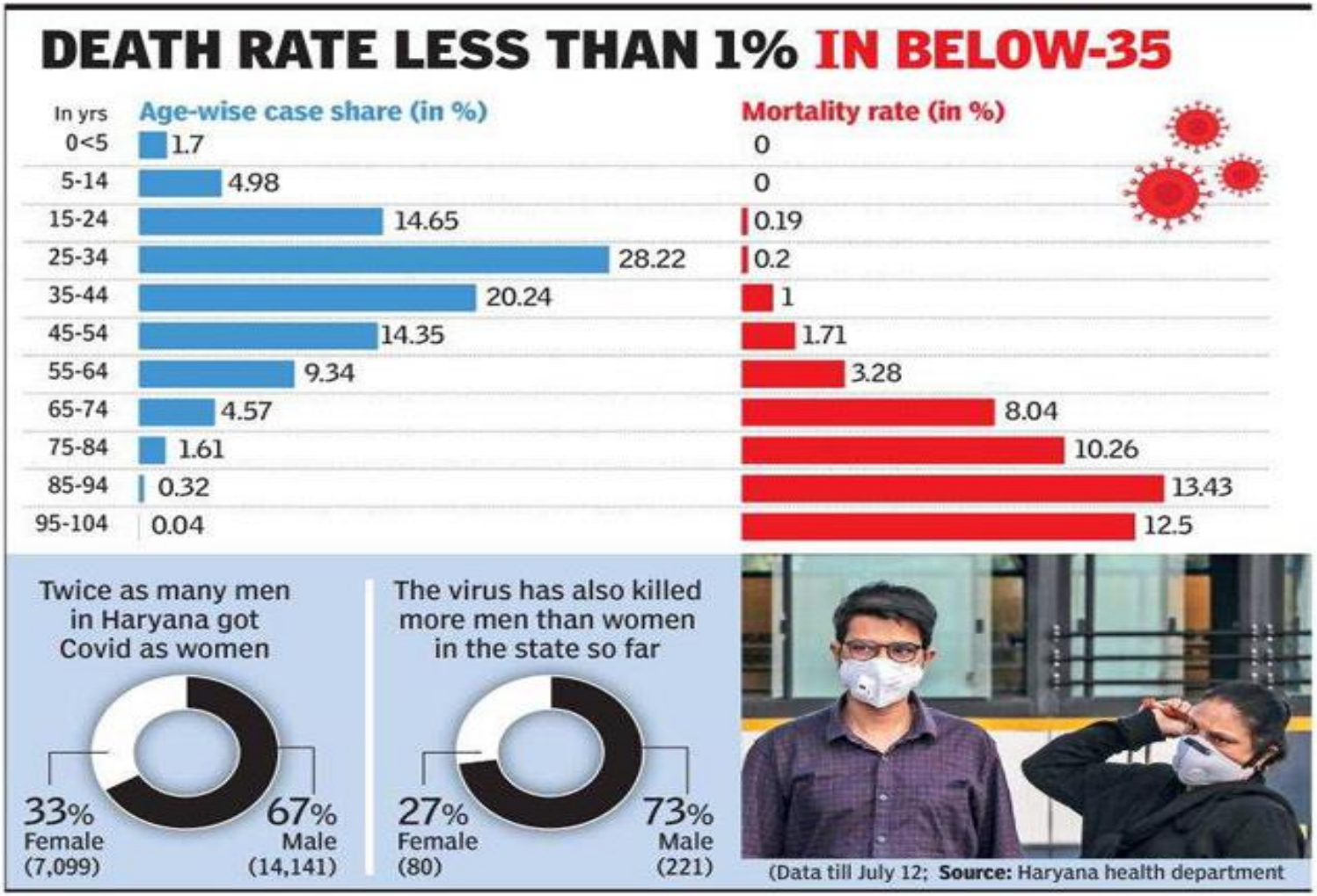
Analysis

1-) This data is till 25th April **shows mortality & recovery cases – travel history of patients**

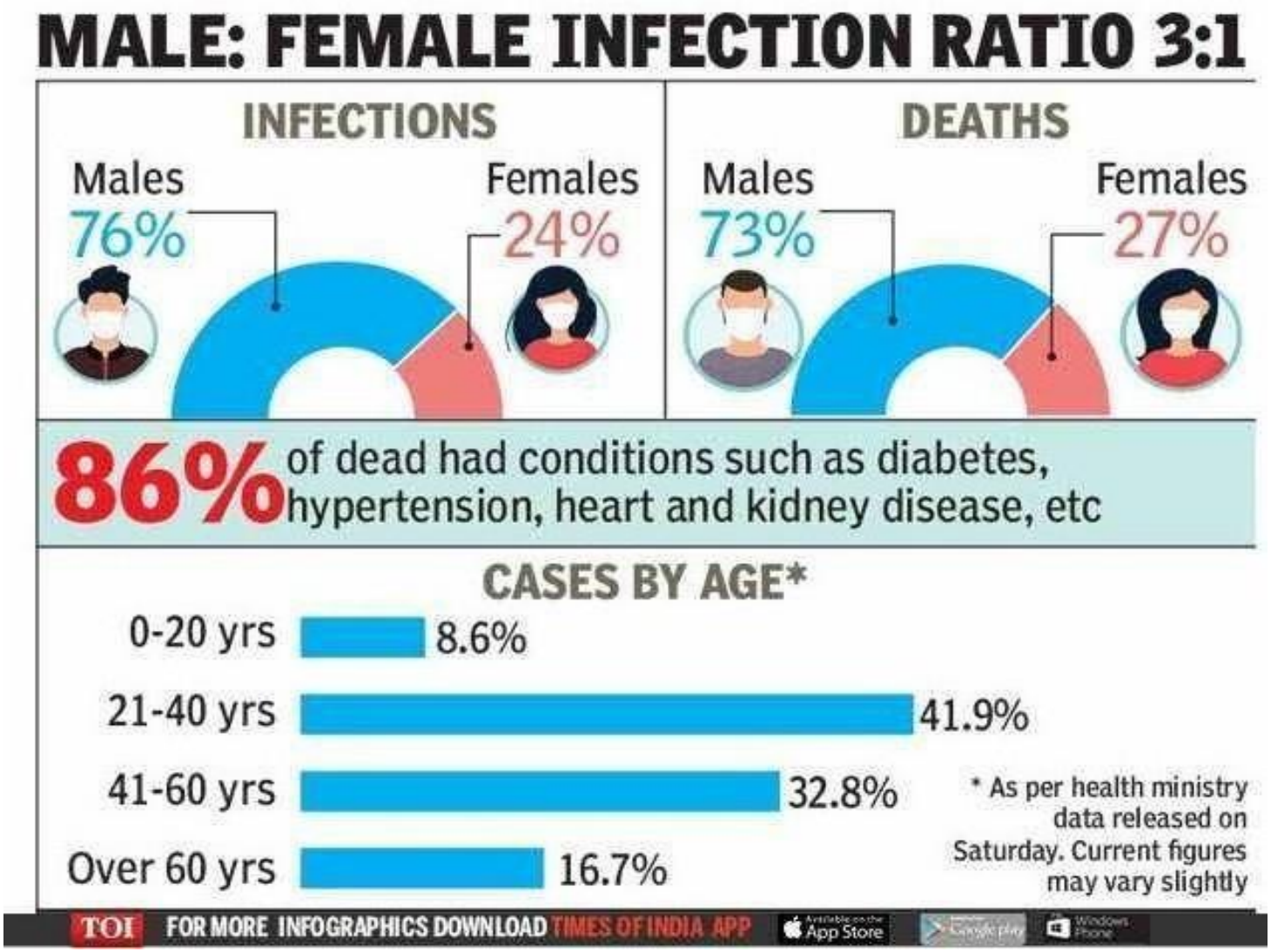
- 86% of Fatality had condition of Diabetes & cardio vascular disease. The government released the bulletin, which shows the recovery rate of Haryana is 66.55% on April, 25th which was higher than the national average in the month April .



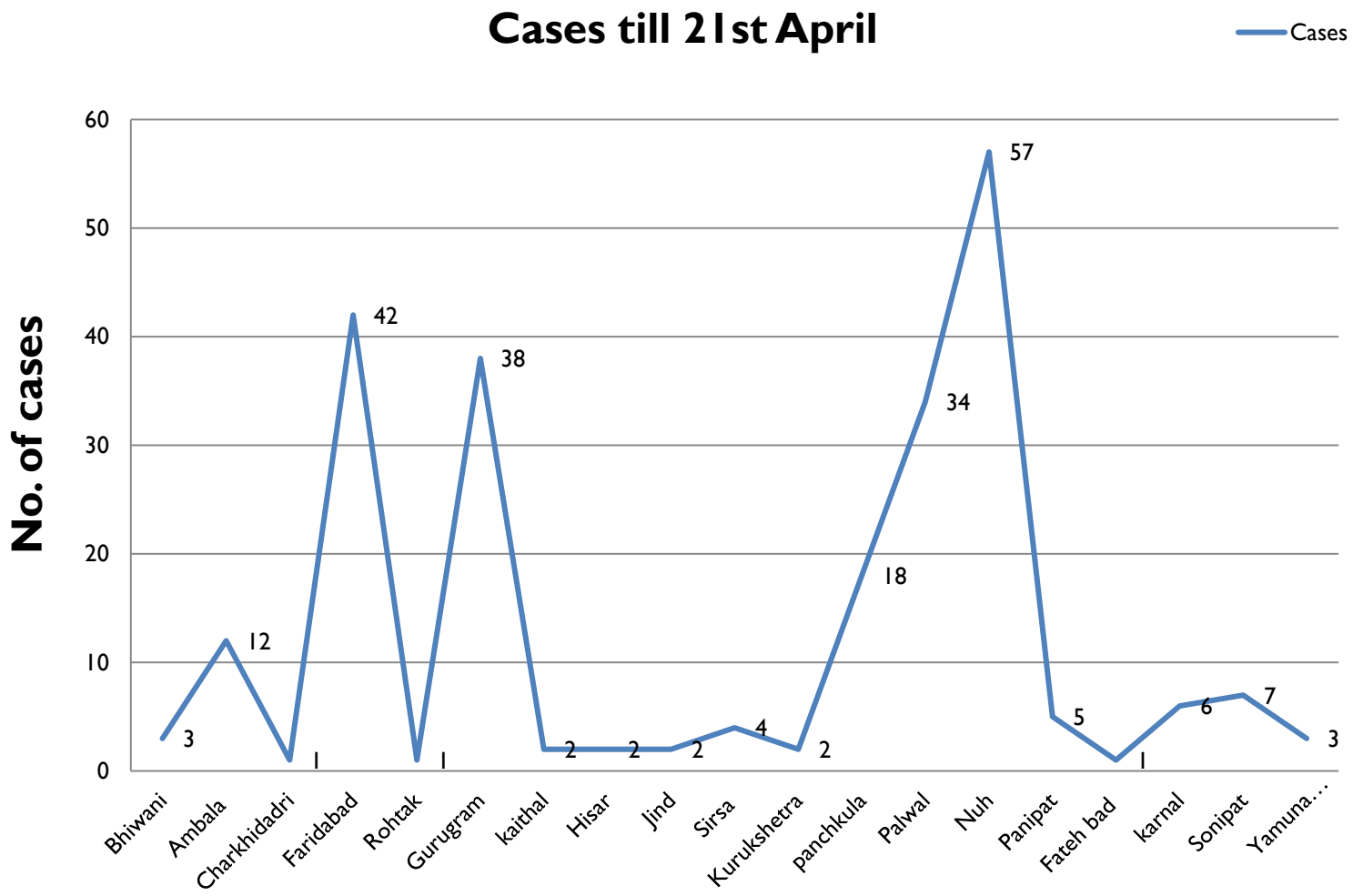
This data is till 12th July , it shows the mortality rate , death is less than 1% in below 35 years



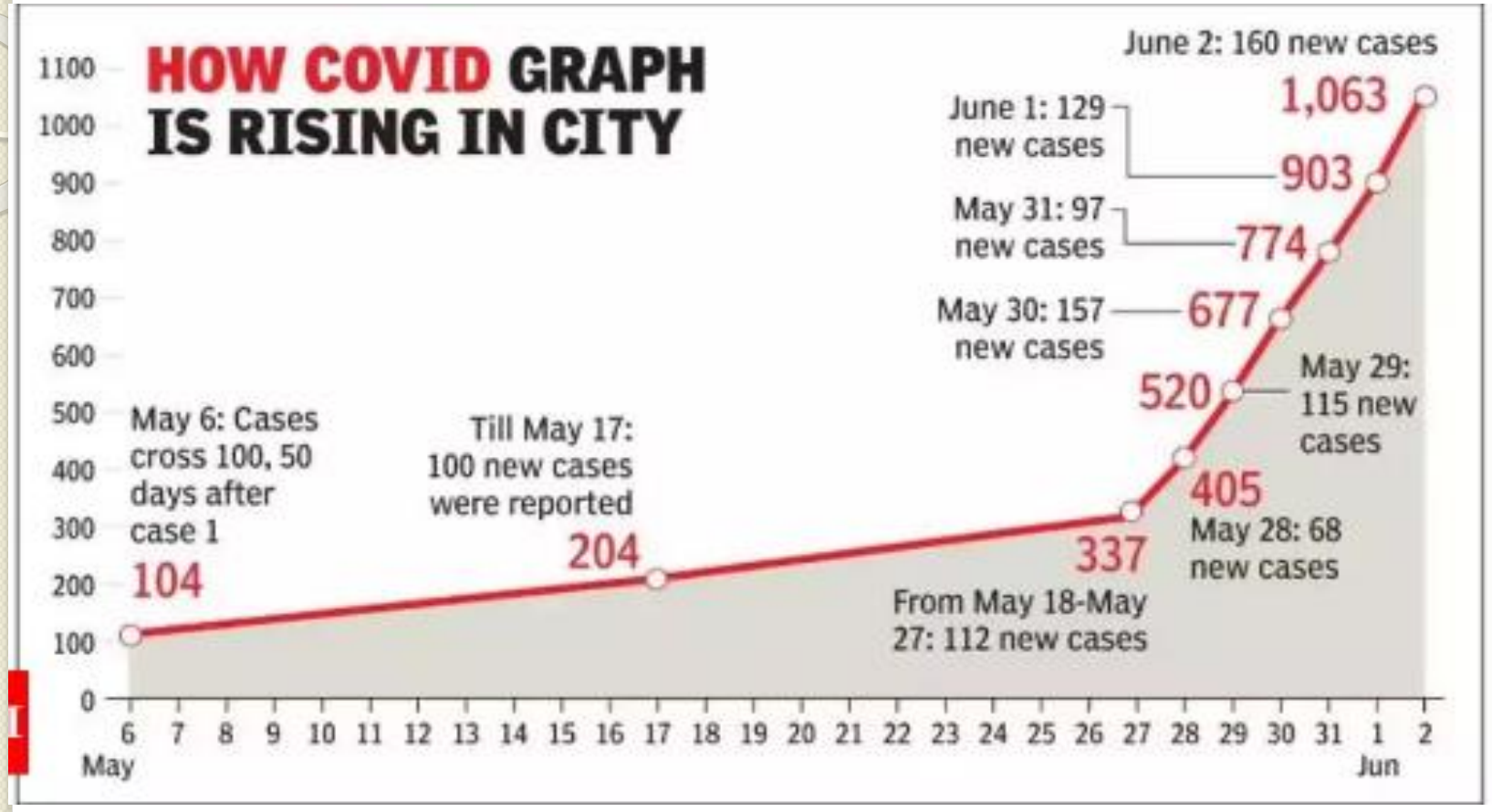
2-) Age sex composition – ratio 3:1



3) Current situation in Haryana till 21st April , no of cases is highest in the district Nuh followed by Faridabad & Gurugram



Status of COVID from the month of May to June – Gurugram district which is badly hit by COVID 19



The cases rises 7% over the last few days. The death in India due to COVID reach 12,237 after growing 24% over last two days . Death rate is risen up 8% in preceding hours. The deaths count in India has nearly doubled in the last 14 days. - On june 18th , 2020

4-) Measures taken by Haryana Government

- The state government of Haryana issued various regulations of COVID 19, to minimize the spread of the virus.

- The permission has been approved then they can use, if a person is found in any illegal activities, then they will be punished and various charges put on the person.
- Government decided under rule that , No private laboratories have been authorized or permission to take or test of corona virus sample in the state till the governments order. The people who have travel history to the affected countries by the virus will report to the nearest government hospital. As to take a various precautionary measure to check the spread of deadly virus, Haryana government decided to impose section 144 in the both city and the villages in the state under which it is not allowed to gather more than 20 people at a place , if they found they will be under punishable act. In Gurugram &Faridabad the gathering shall up to5-person s only.
- The GM of Haryana roadways in all district would be authorized to take all decisions regarding the frequency of interstate &intra state public transport will be heading depending upon the number of passengers on day to day basis , but for now it has been shut properly.
- The frequency of buses is reduced by 40%. The city buses service in Gurugram is suspended till further orders.
- Dry rations would be distributed by the Anganwadi workers at their door steps in rural areas.
- 25% beds should be reserved in medical colleges for COVID patients.
- 722 ventilators have been kept reserve for COVID 19 about 300 new ventilators has been placed – by the government.
- As the cases in Haryana increase day by day, the health department decided to open 11 hospitals with 2901 beds for treatment those who are infected & need critical care.
- PGIMS Rohtak has been set up as the tertiary care for treatment of critical patients

Migration strategies in Haryana during COVID 19-

- Migration trends in Haryana looks like **a reverse trend analysis**, as COVID 19 cases drops, according to data it shows that there were 1.5 lakh migrants/ labors from UP, MP and Bihar who apply to return to the state Haryana.
- Workers who left the state for their native place during the shutdown of all work places, have begun expressing willingness to return to work, this indicates the development in Haryana is not stopped.
- While 8 lakh migrants worker registered for leaving the state for their home towns. Many of them who want to return from their native states they have applied to come to industrial towns of Gurugram, Panipat, Faridabad, Rewari, Sonipat & Jhajjar.
- The first special train during the lockdown, carrying 1200 1migrants from Hisar to Katihar in Bihar. Many migrants waiting to go back will be send back within next seven days through 5000 busses & 100 trains
- Haryana government is ready to pay all cost of transportation. Not a single coin is taken by the migrant workers. In the recent data there were approx.23,452 migrants' laborers have been sent to their home states in free of cost by trains & buses which was organized by the government.

National health mission Haryana (NHM) taken steps against Corona virus (Surveillance activity)– 12th May 2020

In order to stop this pandemic , the Haryana Government has strength erred the surveillance and control measures against the disease' This detailed status of surveillance activity for COVID 19 as on 12thMay, 2020

- This data as on 12th may

•Positive case of COVID 19 rate – 1.36%
•Recovery rate - 43.85%
•Mortality rate- 1.41%
•Doubling rate (days) - 10

❖Total no. of cases – 780

❖Total recovered patients- 342

❖Total active cases - 427
❖No of deaths- 11

❖Cumulative no. of people put on surveillance till – 37592

❖Total no. of sample sent – 62377

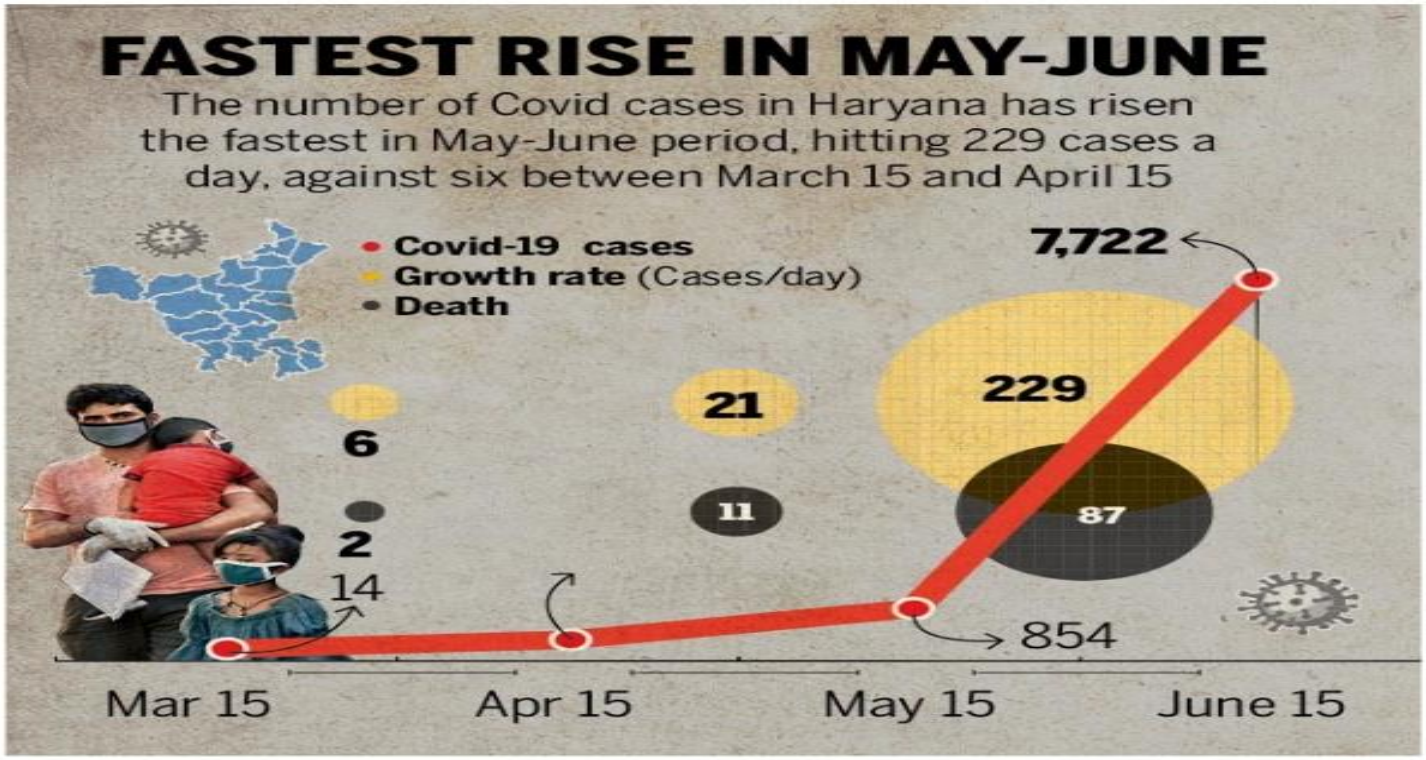
❖Samples found negative – 56440

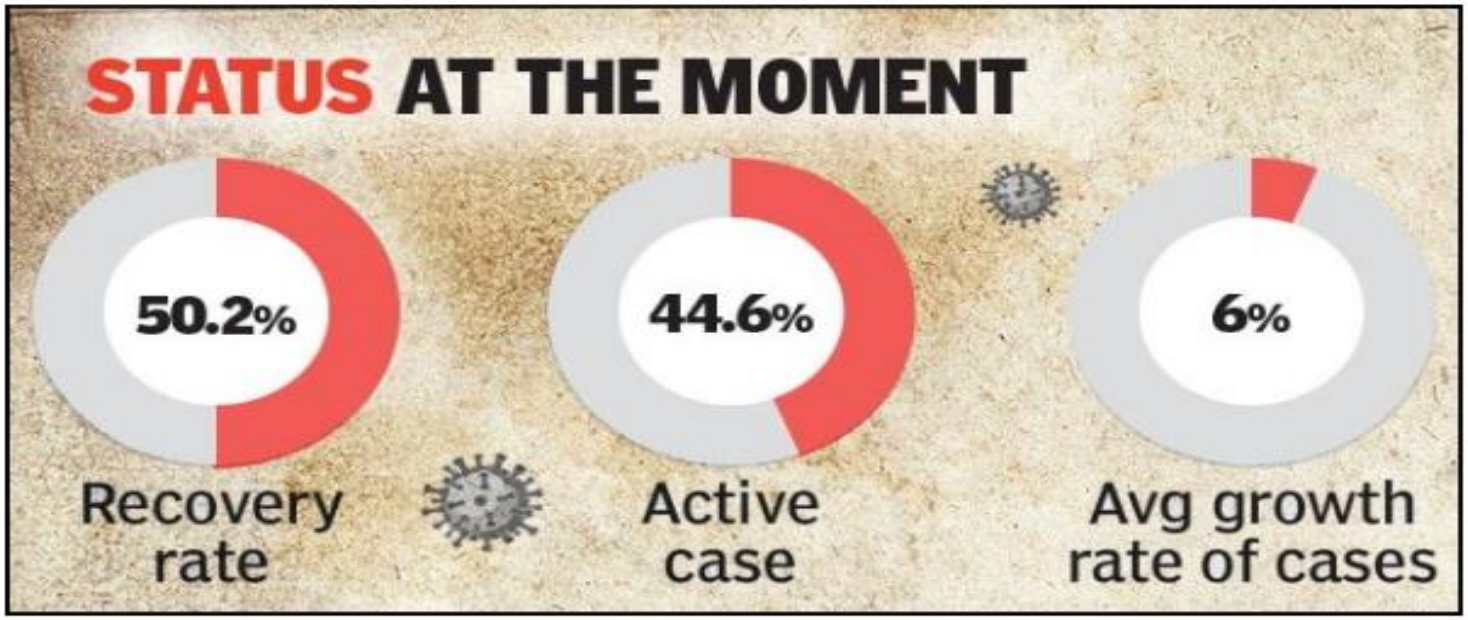
❖Sample results awaited - 5157

Haryana went from bottom to top of COVID top 10 cases just in 3 months-

As per the Government data shows Haryana ranked 9th in terms of COVID -19 cases, in the terms of getting above 10,000 cases in June.

Till 21st June the cases of COVID 19 in Haryana is 10,635 patient & 160 deaths.





- In the month of June.

- However , state faced worst hit of COVID 19 in last month from 16th may to 15th June , where 6,868 new cases were recorded on average around 229 cases every day. Unlock 1.0 is started in the state on 6th June.

Why Haryana saw a sudden rise in case from last month - June

According to the data 80% cases in Haryana is recorded in last month is from national capital.

After unlock 0.1 , factories were open , which results that Gurugram & Faridabad have 50% of cases in Haryana.

Mismatch of data in private laboratories

Health & family Welfare minister- Anil vij said –that the sudden rise of COVID is due to regular movement of people in the state from the others parts of the country.

As we see the gender wise cases , in Haryana 69% patients are male & 31% are female. Among the deceased , 68% were male & 32% female.

• After COVID rises rapidly in the month of June or when unlock 1.0 started in India , testing has been increased & improved in the state.

• There were around 7,098 test were conducted between 15th March to 15th April , this improves to 65,228 test were conducted between 15th April to 15th May & followed by 1,17,588 test were conducted between 16th May to 15th June.

• On the average around 4,000 test were conducted every day in the month of June . And during this past 3 months when the pandemic arises, Government has recruited 312 regular doctors and 206 Ayush medical officers to tackle the crisis.

• However on June 29th 2020, total cases in Haryana is 13,427 in which 4,737 is active case and 8,472 is recovered , with 218 deaths reported. The recovery rate is 64%.

RESULT

- To prevent this disease, All travelers , internationals travelers and Indian nationals are advised to stay in quarantine for 14 days.
- Government had shut the primary schools earlier in the month of march and
- schools and colleges/institutions exams are being postponed due to lockdown , not being held & will also remain closed until further notice. In this pandemic, the major step of prevention is social distancing and proper use of mask and wash your hands with alcohol-based hand sanitizer.
- To encourage private sector organizations & their employers were allowed to do work from home, whenever they are feasible. Meeting should be held on video conferencing or various online apps,zoom, skype etc.
- Restaurants should follow the MHA guidelines to ensure hand washing protocol & properly cleaning and sanitization should be done frequently touched surface. It also ensures that physical distancing should be maintained (minimum 1 meter) between the tables, encourage open seating where practical and physical adequate distancing should be maintained.
- keep already planned wedding to limited gathering, and postponed all non-essential gatherings and functions.

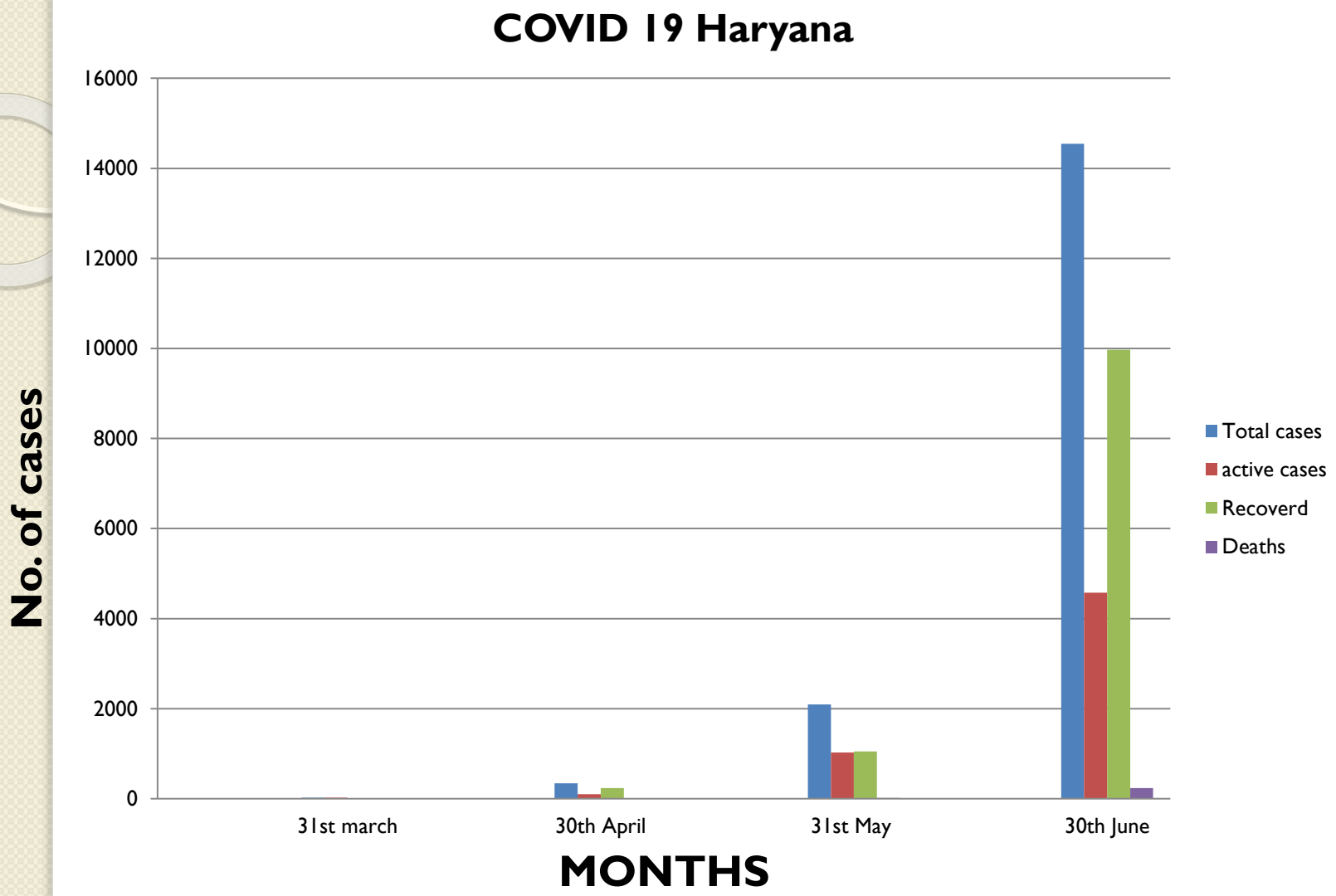
Cases in Haryana month wise-

- As we can see graph it shows the month wise cases of COVID-19. As the first case is reported in Haryana on 14th march after that and till 31st march only 3 cases of COVID in Haryana.

- Till 31st march total cases – 21 with 0 recovery & death
- Till 30th April total case- 339 , active case-101 , recovered -235 , with 0 fatality
- Till 31st May total cases -2,091 , active cases- 1,023 , recovered -1,048 & fatality – 20
- Till 30th June total case -14,548 , active cases - 4,576 , recovered – 9,972 with 256 deaths.

- In the month of April the cases has been very slow in progress till31st April even the testing not much in efficient , but after April the case has been increasing day by day and testing has increased but recovery rate is also increasing in the state.

- June was badly hit month of COVID 19 in Haryana


COVID 19 Haryana
16000
14000
12000
10000
8000
6000
4000
2000
0
No. of cases
31st march
30th April
31st May
30th June
MONTHS
Total cases
active cases
Recoverd
Deaths

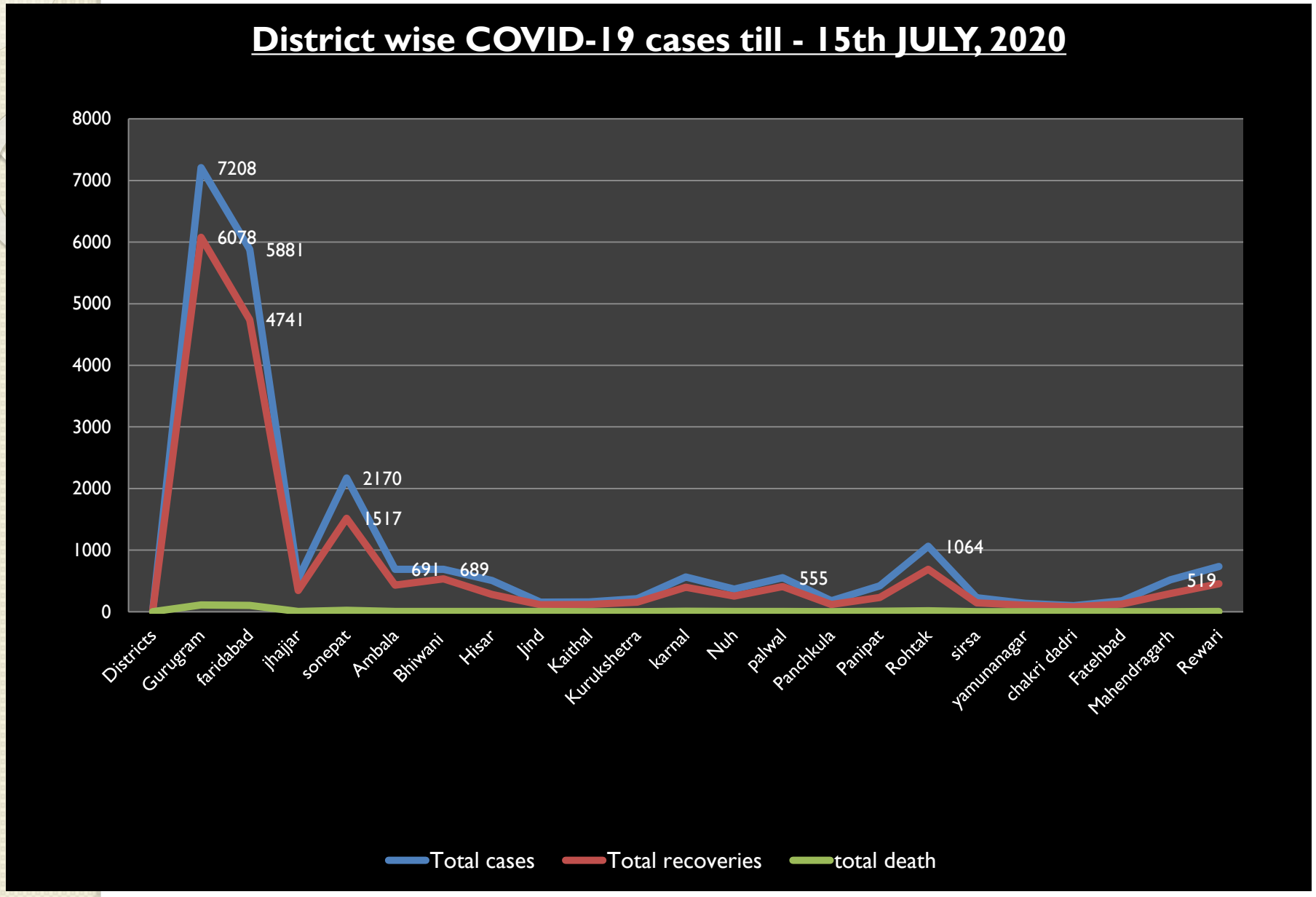
District wise total cases ,recoveries , Deaths - till 15th July 2020-

- As we can see the highest no. of total cases and its among two districts- Gurugram & Faridabad which is being badly hit by COVID and same as increasing recovery rate as well.
- Gurugram has 7208 total cases with 6078 recoveries & 110 deaths & Faridabad has 5881 total cases with 4741 recovery & 104 fatality.
- After Gurugram & Faridabad , third highest district of cases in Sonepat which is 2170 total cases with 1517 recoveries, fatality touches to 24
- These three are the highest hit districts of Haryana in COVID 19.

Data till 15th July , 2020

- Total cases- 23,306
- Total recoveries- 17,667
- Total active cases- 5,320
- Total death – 319 (Male- 234 & Female- 85)
- Recover rate – 75.80%
- Fatality rate- 1.37%
- Doubling rate (days) -21

District wise COVID-19 cases till - 15th JULY, 2020



Conclusion

- Haryana started unlock 1.0 from 8th June , malls & religious place were remain shut in Gurgaon & Faridabad because for worst affected districts and open in other districts by following new guidelines , no gathering will be allowed & social distancing norms must be followed by the latest guidelines by Haryana government.
- Restaurants are permitted to function with 50% of capacity. From 1st June Gurgaon district saw six – fold rise in COVID 19 deaths, Cases were rising so fast it goes 3 times more than the previous month .Nearly 6000, approx 45% of cases alone is Gurgaon itself in the state.
- The other two districts, Faridabad & Sonipat is also hit by virus. These three districts Gurgaon , Faridabad & sonipat are having cases more than 4000 by June 11th , On 31st may Gurgaon had only 3 deaths and 774 cases but number is increased by 19 deaths & 2737 cases on June 11th (1760 is active) Gurgaon report 6 deaths in a single day.
- Between may 31 & June 11 there is an increase of 3 fold COVID cases & deaths from 20 to 64 & 2091 to 5969 respectively. Corona virus cases rises up from 1.84 % to 3.84% during fatality rate increased from 0.96% to 1.07 %.

- The rate of doubling of cases from 9 to 7 days & recovery rate dropped from 50.12 % to 37.87% on 11th June.

- After 2nd week of June the recovery rate is improving day by day. On June 29th 2020, the total cases reported in the state is 13,427 , in which active cases- 4,737 and recovered case – 8,472 , where death arises to 218 in the state due to COVID 19. As per the update on 29th June the recovery rate stands for 64% of COVID patients.

- Haryana to start Plasma therapy for treatment of COVID patient , on June 30th , six patient had successfully undergone plasma therapy trails at PGIMER.

- People should maintain social distancing & maintain hygiene properly

Current Policy status

- State Govt. has given additional pay benefit for Healthcare workers, who are posted in COVID ICU/Isolation wards and who perform any procedure/surgery/conduct delivery of COVID patient .
- State Govt. has given benefit of life cover of Rs. 50 Lakhs for Govt. employees i.e. Doctors, Nurses, Gp. 'C' and Gp. 'D' employees, posted in COVID ICUs, COVID Isolation wards, COVID OTs and an ex-gratia of Rs. 10 Lakhs against loss of life due to COVID-19 till June 30 '2020 for all Govt. employees whether regular, part time or contractual, working in various containment zones including ASHA workers .
- Govt. of India has provided a life cover of Rs 50 Lakhs for all healthcare providers i.e. **Pradhan Mantri Garib Kalyan Package:** Insurance Scheme for Health Workers Fighting COVID-19.
- The guidelines for rational use of PPE for healthcare providers were issued vide letter No. 3PM(COVID)/2020/5944-65 dated 05.05.2020 .

- All the suspects/ patients undergo enormous psychological stress during the whole duration of being identified as a suspect or patients till the surveillance period is over; and require psycho-social and psychiatric care. The SOPs for the same have been prepared and circulated vide Letter No. DMHP/Main/II/2020/1897 dated 15.05.2020 after approval by State Govt.

- Spread of awareness in general public w.r.t. COVID-19 through IEC material by Development & Panchayats departments. The concerned department has already been requested for the same vide Letter No. 3PM/2020/5187 dated 21.04.2020 and 3PM(COVD)/2020/6083 dated 13.05.2020

- Continuous trainings/ sensitization of all healthcare providers for self care as well as patient care w.r.t. COVID-19.

- Additional manpower has been provided at Districts.

Limitations

1- This study was conducted for the shorter period of time

2- The information & data may be not accurate or incomplete

3- It may be biased as it is from secondary sources- journal or articles

Reference

- Haryana/articleshows/74668812cm?utm-source=contentofinterests&utm-medium=text&utm-campagin=cppst
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- National health mission Haryana(NHM) taken steps against COVID-https://www.nhmharyana.gov.in/page
- https://www.hindustantimes.com/delhi-news/haryana-request -delhi-to-issue-special-passes-for-govt-employees/story
- http://haryanahealth.nic.in/CovidManPlan.html Health department Haryana


Wash your hands frequently
Cough and sneeze into the elbow
Dispose of used tissues immediately
Avoid contact with others
Avoid crowds and public gatherings
Avoid touching your face
Clean all shared surfaces frequently
Avoid all nonessential travel
Call ahead before going to a clinic or hospital
Isolate yourself if sick or at risk of complications
Work from home if possible
Only wear a mask if you are sick, have COVID-19, or are caring for someone with it

THANK You

PART – 2

ONLINE COURSE

An Introduction To Global Health

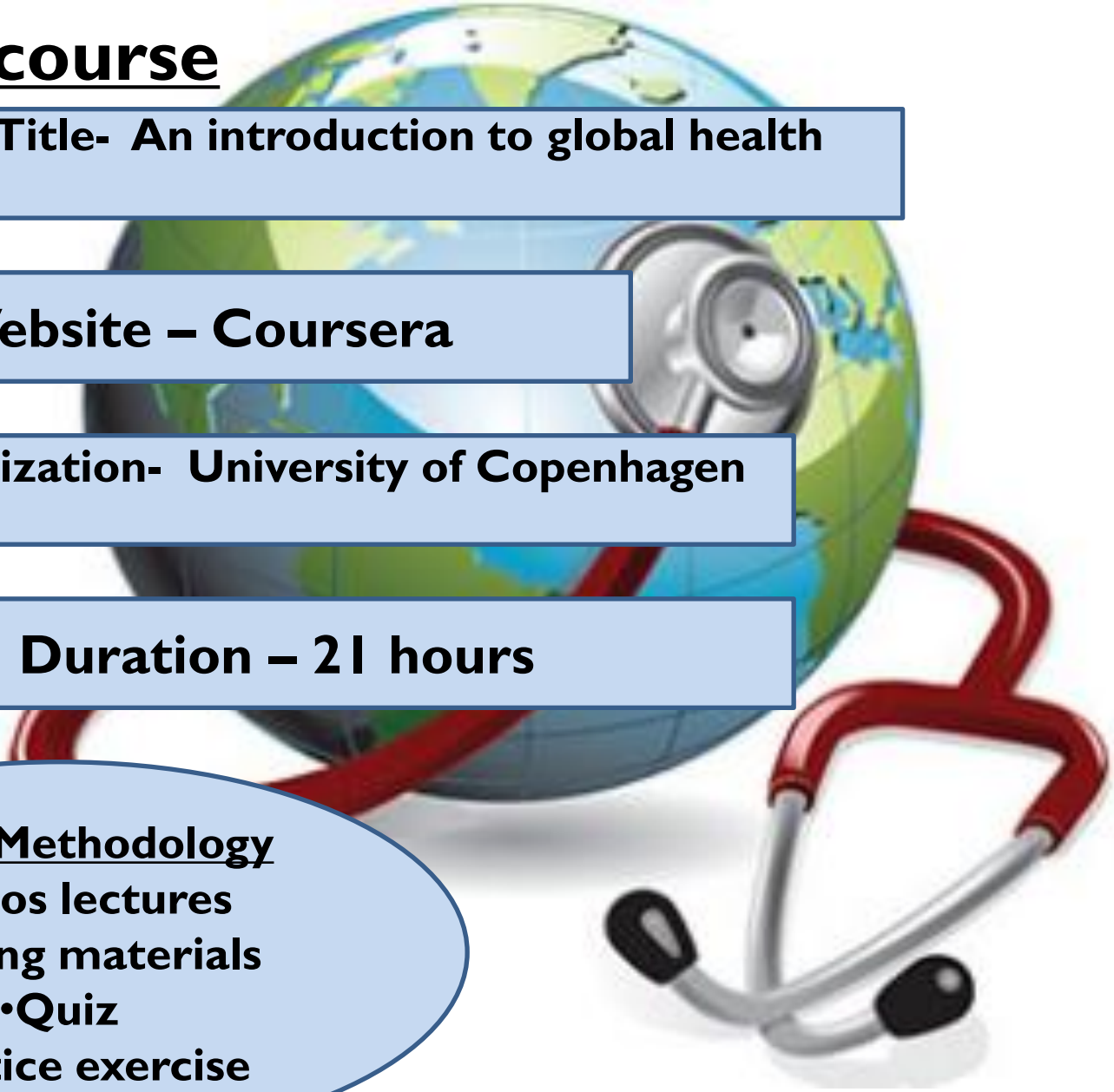
Online course

Title- An introduction to global health

Website – Coursera

Organization- University of Copenhagen

Duration – 21 hours



Learning Methodology

- Videos lectures
- Reading materials
- Quiz
- Practice exercise

Completion of Course

UNIVERSITY OF COPENHAGEN

COURSE CERTIFICATE

06/14/2020

Anshu Singh

has successfully completed

An Introduction to Global Health

an online non-credit course authorized by University of Copenhagen and offered through Coursera

EDUCATION FOR EVERYONE
coursera
COURSE CERTIFICATE

Professor Flemming Konradsen
Director, School of Global Health
University of Copenhagen

Verify at coursera.org/verify/FZJ6FDDFCLYP
Coursera has confirmed the identity of this individual and their participation in the course.

Objectives

- Defining & Measuring Global Health
- Infectious Disease
- Non- Communicable Disease
- Sexual Reproductive Health & Rights
- Environmental Health Challenges
- Food & Nutrition
- NCDs & Health care system

Defining & Measuring Global Health

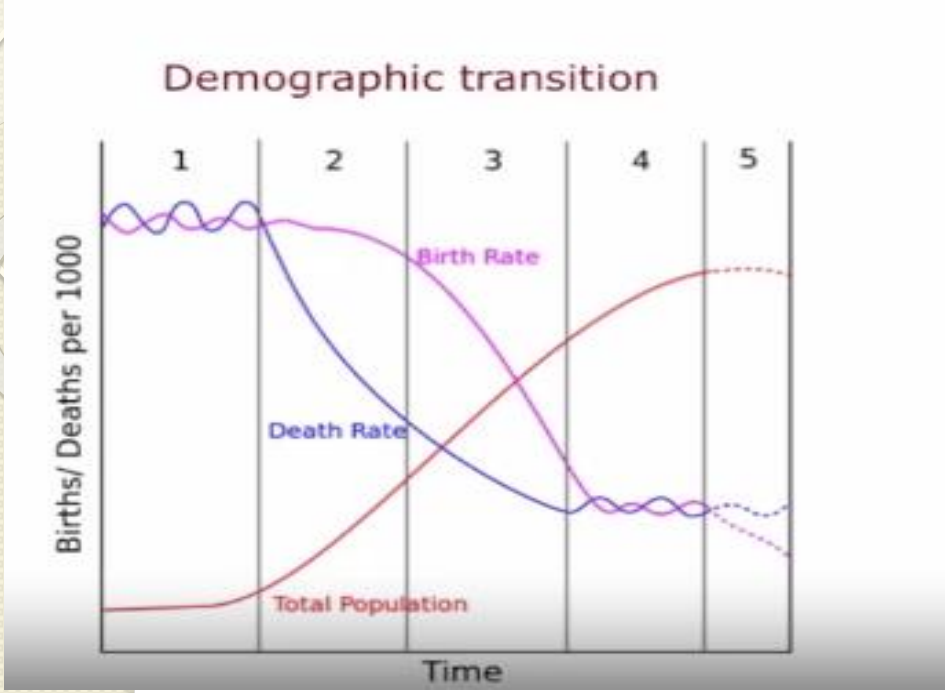
An area of study, research and practice that place a priority on improving health & achieving health equity for all people worldwide.

Land marks in global health-

- 1) The establishment of world health organization.
- 2) Alma Ata Declaration on primary health
- 3) MDG
- 4) SDG

Challenges in Global health-

- Increasing mobility of patients to consume healthcare.
- Health is not a service but a right .
- Poverty and corruption .
- unequal access to healthcare .
- Maternal & child mortality .
- Migration because of war& natural disaster .
- Obesity & climate change .
- Mental health problems .



- Demographic transition is clearly related to age , the transition progression is from younger to older population , age plays a vital role as it is risk factor of NCDs, increase in age means higher risk of NCDs and deaths . cardiovascular disease , diabetes and High bp is common in younger population.
- To reduce the risk of NCDs we have to increase physical activity , and healthy diet should included in daily lifestyle. Higher the socio economic status , higher the risk of NCDs.

Disability Adjusted life years (DALY) -

Measurement of overall burden of disease , From the time we were born till we die we experience shorter or longer period of disease or disability. Some of us will , for various reasons died before we reach the average life expectancy in that specific population. It is the tool which allow to measure and compare the impact of disease that focus on infectious like flu , malaria or HIV /AIDS or whether we deal with NCDs like diabetes , depression or cancer .

DALY = YLD+YLL

YLL- years lived with disability (incidence *duration*disease severity weight)

YLD- years of life lost

In the last survey from 2010 , this has been expanded to cover 291 disease & injuries .

GLOBAL BURDEN OF DISEASE-

Major Determinants of change-

- Demographic changes
- Urbanization &consumption Pattern
- Economic Growth
- Change climate & disaster
- War & Conflicts
- Innovation healthcare & technology
- Natural Resources
- Nutritional transmission

Survey tells that , obesity is only related to diabetes in the western world. If you see Africa & southeast asia less than 50% of all diabetes , type 2 diabetes are fat.

Death attributes to 16 leading risk factors All countries (2001) –

•Blood pressure.
•cholesterol .
•Iron deficiency
•alcohol
•physical inactivity .
•Unsafe sex
•unsafe waste and hygiene .
•indoor smoke from fuels .
• under weight
•urban air pollution
• Zinc deficiency .
•Vitamin A deficiency .
•Unfair health injections

Infectious Disease

In 19th century Low life expectancy , high child mortality , world highest mortality even

was in new York in 1902 , it is the place where you had most couple born per child by

malnutrition . In Europe in 19th century about 5 – 10 % died from TB & tropical malaria

and even vector borne diseases .

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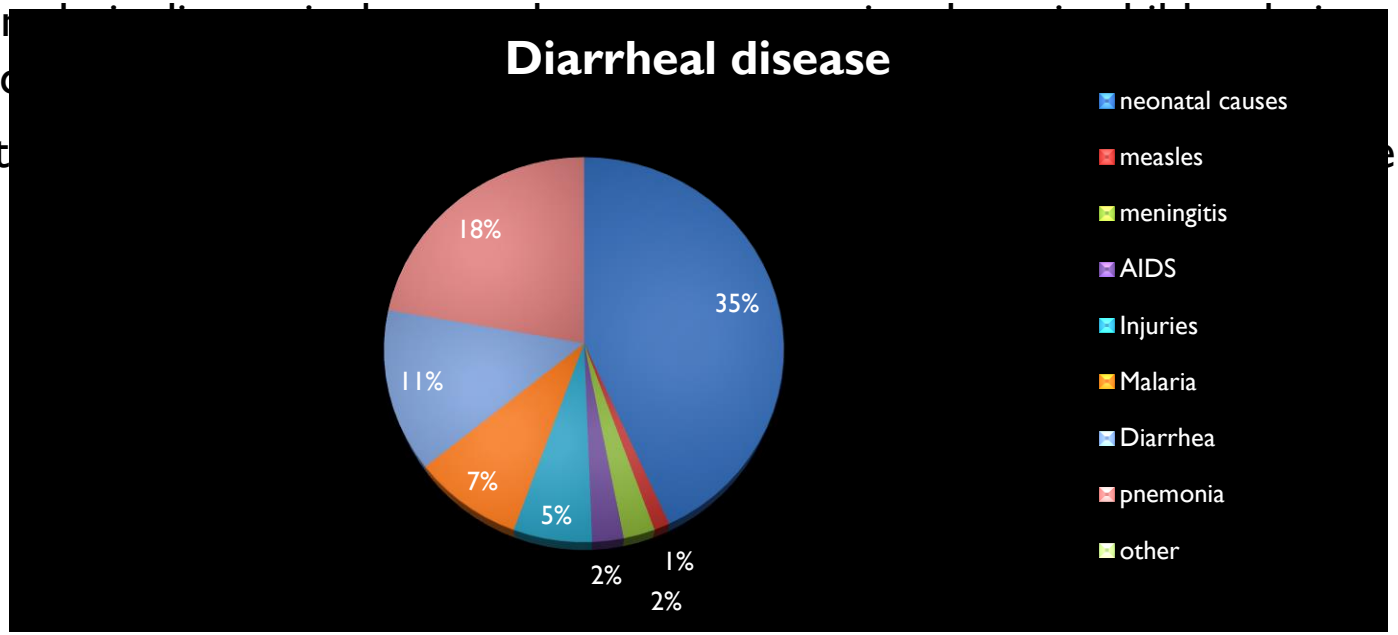


Vibrio cholera Around 3 to 5 million people were affected by cholera which is caused by bacteria. Kills amount 100,000 each year . cases reported from Africa , southeast asia & Haiti. It is found in brakish and marine water . It is spread through fecal oral route for contaminated water &food . Rice water stool , the condition can be life threatening and death can be occur within hours if not managed. Treatment with rehydration &antibiotics . Sanitation can reduce the risk of infection. Vaccines are available since late 1800s .

MALARIA – THE TRANSITION –

No vaccine is yet developed for malaria , the drug is used to treat the disease are constantly threatened by emerging drug resistance in the parasites.

Malaria - Elimination& Eradication

Small pox was officially declared eradicated in 1979 . Malaria is caused by single called parasites of the plasmodium . If the mosquito carries malaria parasite , so called sporozoites are released in to the skin during feeding . Parasite multiplication in the blood continue until the patient is either treated or died or until the immune system is able to control the infection

Indoor insecticides spraying primarily with ddt was very important & highly effective component .Chloroquine ,

Main tools - mosquito control , anti parasite drugs , avoiding mosquito contact .

Mosquito resistance to DDT is how the ecosystem works . Malaria is a disease in transmission , so make long term maintenance of immunity more likely .

HIV – IN GLOBAL HEALTH –

- There were Two major types of HIV-
- Type 1 - HIV – came from chimpanzees
- Type 2- western part of sub Saharan Africa - came from the sooty mangabey .
- The pandemic rise when approx 3.3 million new infections found in 1996- 1997. The no. of new infections has again gradually declined & has remained stable since 2003 with approx 2.7 million new infections per year. Deaths are decreasing by AIDS from last 3 – 4 years .The major milestones – The jumps (100 years ago) & acceleration (1950-70) . In some African countries AIDS is known as slim disease .The first patient diagnosed on either US west or east coast & most were younger , otherwise healthy gay men .In 1983 the virus which causing AIDS were discovered. The first Anti HIV drug was prove effective (1987) .
- Mode of transmission – use of ART & use of condoms when sexually exposed are far by most effective way to prevent transmission . only use of clean needle and other harm reduction intervention .
- **HPTN 052 trial** -The risk of infection in heterosexual partnership with HIV+ person , Early ART reduced the risk of sexual transmission of HIV . It was only 28 of the 38 person that become infected while in the study that was indeed infected by the partner , the rest was from third person .

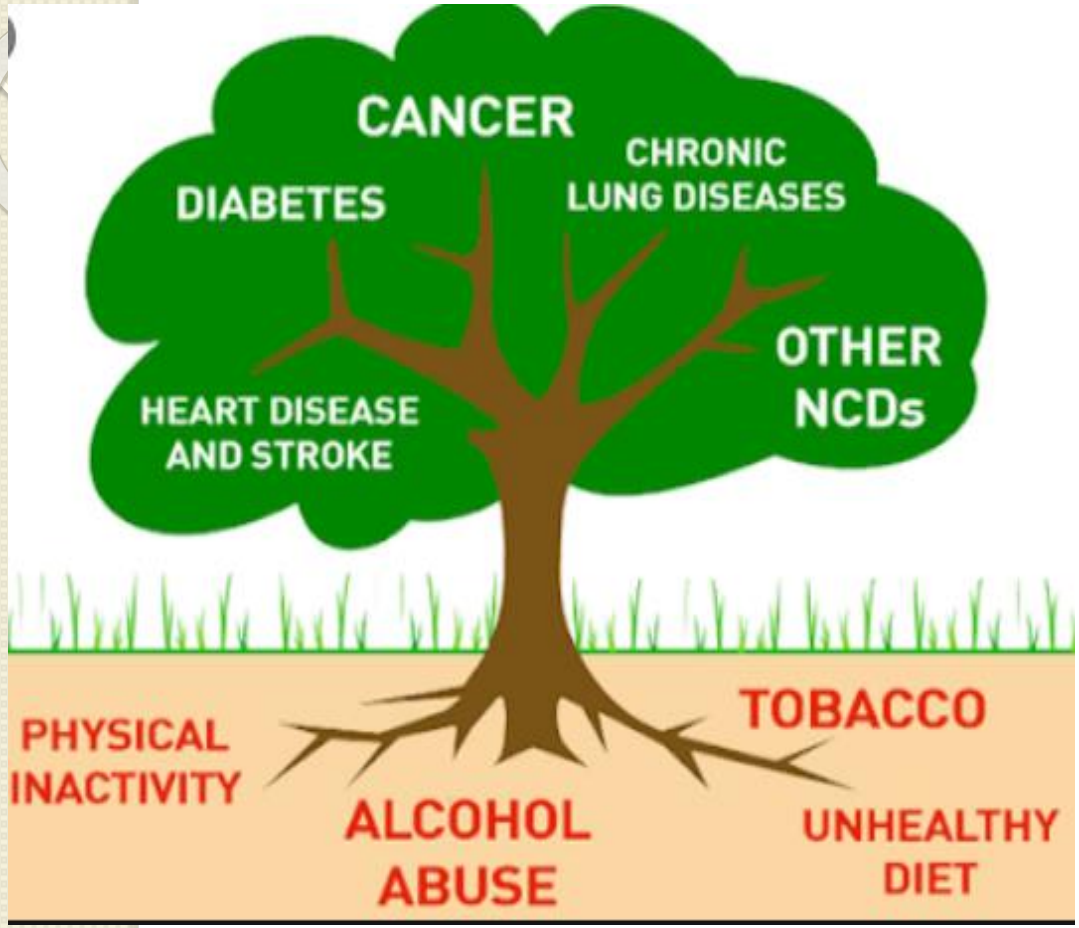
- **Prevention – ART –**
- Efficiency –Harm or benefits/ require life long
- Care facilities
- Costly & diagnosis
- **Current global strategy –**
- Get more HIV+ people on ART
- In 2015 , 15 million HIV patients on ART trial

NON – COMMUNICABLE DISEASE

NCD are groups of disease that share common risk factors , common causes & determinants and therefore share opportunities for mitigation nd prevention .
WHO & with the group of organization said that ,there are four disease with four modifiable risk factors .

- **1)Diabetes –**
- 285 million people affected by diabetes , In 2010 approx 6.4% of world adult population, In LMIC there were 70% diabetes cases
- **2) Cardiovascular disease –** major cause of death in globally around 17.3 million people dies and 23 million people by 2030 will be affected . 80 % of LMIC is affected by CVD.
- **3) Chronic respiratory -** 7% of all deaths worldwide occurs . Deadly synergies exit between disease such as TB & HIV AIDS , COPD& lung cancer .
- **4) Cancers –** 50 % death by globally because of cancer till 2020. Linked in infectious nutrition & environment pollutants . Some cancers are linked to infectious , some cancers are linked to nutrition & alcohol , some cancer are linked to environment pollutants .
- **5)Mental illness–** Around 20% children in the world are facing mental illness. Depression is the major cause of death . 90 people suicide every hour of everyday , and this is in LMIC & MIC countries.

Risk factor of Major Disease



It is the growing cause of death globally – 36 million in 2008 alone . NCDs are not disease of the rich 85 % of NCD occur in poor population in the world . NCDs causes poverty ,& entrench people in poverty . NCDs disease is for old and young people both are affected by it . More than 50 % of globally NCDs occurs in people younger than 70 . NCDs do not just affect man , 65% of the women death is by NCDs 80% of NCDs are preventable through primary prevention .

DIABETES –It is a disease of poor glucose control and metabolism & are two types of diabetes , type 1 and type 2 .
Type 1- Poor insulin secretion (largely occurs in young people)
Type 2- Poor insulin action (in young adults)
But now a day type 2 is also occurring in young people
Effect – it affects the eyes , effects the kidney , cause heart disease , stroke , a mutation
A person with diabetes dies an average between 12 to 14 years earlier than a person without diabetes .
TYPE 2 Diabetes- 95% of diabetes are very common . In global prevalence of type 2 diabetes has been increasing in low middle income countries and even in rural areas . About 400 million people worldwide & could be 600 million within the next 20 years .
It has been increase in overweight & obesity worldwide , by type 2 diabetes .
95% of research comes from high income countries .
50% - 80% diabetes remains undiagnosed in low and middle income countries .

Co-morbidities- People with diabetes are at high risk of several kinds of infections . In people with diabetes infections like streptococcus , fungal infections , urinary tract infection are more resistance . People with diabetes are at high risk of developing TB .

60 % of the global burden is from NCD . Health investment is only 2%.In 2100 , the united state nation held a high level summit where all members states signed declaration to fight NCD but that has that been translated into a fund , such as global fund for NCDs .

MENTAL HEALTH IN GLOBAL PRESPECTIVE –

- Mental disorder leads to addiction &alcohol . In 2004 , worldwide the burden of disease of mental disorder , was about 13 % and again majority of that was due to depression .WHO launched global mental health action plan which suggest a number of key objectives . In many western countries the spending on mental health from the health budget is about 10% .

- But in England , germany , france and dnemark spending on mental health is above 10% . On the other hand poor countries the budget all meant to help spending is 1 % only .

SEXUAL REPRODUCTIVE HEALTH & RIGHTS

Only 10% of women are using contraceptive in modern countries . convention on elimination of all forms of discrimination against women (1971) .The third aspect of sexual reproductive health & right became clear , HIV/AIDS & therefore STD. Reproductive Health was not part of the MDG as they were implemented in 2001 and it was included until 2007 . SDG goal no 15 sexual reproduction health rights have been implemented.

- WORLD HEALTH ASSEMBLY SRHR STRATEGY (2004) -
- Improving antenatal delivery ,
- postpartum & new born care .
- Providing high quality service for family planning .
- Eliminating unsafe abortion
- Combating sexually transmitted infections.
- Promoting sexual health

COMPONENTS OF SEXUAL & REPRODUCTIVE HEALTH –

- Trends in sexual & reproductive health-

1)Maternal &new born health - 3 million babies are born dead every year . over quarters of million women die due to pregnancy & child birth . This total more than the no. of deaths by HIV/AIDS , TB & malaria together .

2) Family planning –

- contraceptive method – Intra utrine device , Hormonal implant , female condom
- There is in the increase in use of contraceptive in developing regions , 10% in 1960 to 60% in 2000 .
- Global fertility rate declined from 6 children per women (1960) to 2.8 children per women (2000)
- 215 million women have UNMET need of family planning

3) Unsafe abortion – around 44 million pregnancies are annually terminated by induced abortion . In 2012 half were unsafe abortion , unsafe abortion have increased from 44% in 1995 to 49% in 2012 and death caused by unsafe abortion is declined from 69.000 in 1995 to 47.000 in 2012 .

4) Sexually transmitted infections – Every year 450 million new cases of ST infection occurs .HIV related death in adults in Africa is the major cause .

5) Sexual health- . Sexual health also includes – sexual dysfunction , gender related violation

THE ROLE OF UNITED NATION POPULATION FUND –

- UNFPA is the lead agency in the UN organization with mandate about reproductive health and family planning .
- UNFPA , ensures that every child is safe & that the potential of every young person is fulfilled .The UNFPA supports the government
- The advocating help government to collect data , census data for their population and also by procreating or purchasing contraceptive on their behalf.
- Contraceptive is the central part of work of UNFPA because , it ensure people can do proper family planning , and there is no family planning without contraceptive .
- 220 million women in globe with unmet family planning as a result every year 54 millions unwanted pregnancies .
- Mother who is breastfeeding cannot use a contraceptive , a hormonal contraceptive which has high dose of hormone because that is dangerous for the child .

M-HEALTH IN REPRODUCTIVE AND CHILD HEALTH –

- Two major challenges – 1) access to health services 2) Quality of service provides
- M Health is basically the practice of medicine & public health supported by mobile device such as mobile phones .
- Benefits of m Health – Collecting community & clinical health data . It has a direct provision of care to deprived population . Improve adherence to treatment therapy . Mobile health is the great potential to improve reproductive & child health . It is a key area of achieving the goal set by the UN & WHO for women & children's health .
- TWO m health innovations – Wired mothers , low tech mobile phone technology to link pregnant women to the health system throughout pregnancy , childbirth & postpartum period

Environmental Health Challenges

- 24% of the global disease burden is liked to environment risk factors
- In children 34% of disease burden is attributed to the environment

Environmental factors impacting human health –

- Poor quality water
- Insufficient access to water
- Lack of appropriate sanitation
- Poor personal hygiene
- According to 2001 figures included in 2013 update from the World Health Organization , UNICEF , joint monitoring program on water supply & sanitation , 89% of the world population has access to safe drinking water.
- By the end of 2011 , there are 2.5 billion people who did not used improved sanitation facility mainly south east Asia , Africa , and south of the Sahara .

Environmental risk factor -

- Indoor household air pollution from slid fuels ranked 3rd in contribution to the global disease burden .
- Cooking & heating with traditional stoves
- Air quality

Urbanization risk factor –

- Environmental hazards
- Solid waste disposal
- Waste water management
- Provision of salt water
- Sanitation
- Noise
- Food safety
- Traffic & occupational injuries.

Main Environmental challenges- It diarrheal disease , respiratory disease of course vector born disease of course vector borne disease continue to be important in certain regions .

- Malaria become a big problem in Africa even though there has been a lot of progress. Occupational health issues which probably as mainly with globalization.
- Primary prevention at ecological sustainability but also the economic & social benefits that comes from good health & good environment .
- 65% of all deaths globally are due to non – communicable disease. Mortality has declined dramatically on global basis. Life expectancy has increased by 50 years to 70 years.
- In recent years, displaced populations are increasingly from middle high-income countries. Diabetes, cardiovascular disease & cancer occupying a larger part of their burden of disease.
- About 1 billion of the world urban population is living in slums . 40 million persons internally displaced within their own country only counting because of conflicts & violence.

Food & nutrition

- Under nutrition ⟷ Infection
- It means under nutrition leads to infection & infections leads to under nutrition.
- Under nutrition potentiates the effect of infections. several million children die each year due to under nutrition.
- Under nutrition increases the risk & severity of infections by impairing the immune system, this is called (NAIDS) Nutritionally acquired immune deficiency syndrome. The most widespread immune- suppressive disorder globally
- Vitamin A supplements is a cost effective.
- Vitamin A stored in the liver the capsule with high dose which can keep the body going for several months.
- Vitamin A supplementation has shown to reduce case fatality among children with measles.
- But study also suggest that vitamin A supplements of HIV+ women may actually increase mother to child transmission of HIV.
- Iron supplementation trail was stopped because of an increased infectious morbidity & mortality.
- World health organization has revised their recommends and now advise caution when giving iron supplements to children in malicious areas.

Sanitation & Development Goals –

Sanitation programs which have tried o speed up their provision have depended on subsidizing the toilet

•The first requirement is to design &promote toilets that people can afford it , The problems are particularly in rural areas .We have to convince the people about hygiene and sanitation , problem is that the campaign are aimed wrong motivating factors , they are not based on good market research.

Eg- One survey in ghana found that enough people in rural ghana already decided that they wanted toilet & if they had toilet they would meet the millennium goal.

In research in Africa &asia , that there is a big security problem relating to this public toilets. In one study in Bhopal in India, found twice as many as women were using those & the usage by women dropped off extremely sharply by distance. Because of sexual violence , women were being attacked , assaulted , and sometimes raped at or on the way to back from public toilets.

Disease Related to water, sanitation& Hygiene –

Environment factors causes about 25% of deaths & disease globally.

Key area of Risk-

•Poor water supply
•sanitation
•Toxic substances
•Vector born disease

Around 1.7 million annual death mostly children under 5 years of age from diarrheal disease.

Guinea worm- is unique because its only communicate disease that is transmitted exclusively through contaminated drinking water.

Diarrhea –

•Quality of water
•Eyes & skin infection
•Sanitation
•Hygiene behavior
•Malnutrition

Children in developing countries typically have three to five episodes of diarrhea each year. Such diarrhea episode can cause death, dehydration or contribute to malnutrition.

NCDs & Health care System

HEALTH IN ALL POLICIES-

whole of government approach, whole of society, intersectoral action has been around

for last 30 years. People are responsible for their own choices. There are many levels of possible coordination or integration of prevention, coordination of health services that is very important.

- TB, in the high burden countries to great extent attributes to the amount of tobacco, poor nutrition & alcohol. AIDS for people who are getting the treatment converted in to a chronic disease.

FRAMEWOK CONVENTION ON TOBACCO CONTROL –

- Response to increasing tobacco use.
- 2013 there are 6 million people globally.
- By 2030- tobacco will 8 million people.
- 2014 – 176 countries around the globe , which is about 90% of global population have ratified this treaty.

FINANCING UNIVERSAL HEALTH COVERAGE-

- UHC strategy to ensure that all people obtain the health service that they need without suffering financial hardship when they pay for them. UHC is the global attention promoted by the WHO & global post 2015 agenda for health.
- SDG sept 2015, UHC became a separate target under goal 3, to ensure healthy lives& promote well being for all ages. On global scale,
- 56% of the global disease burden, but only even less than 2% is in global health spending
- WHO estimated that 100 million people come under below poverty line every year

GLOBAL HEALTH GOVERNANCE –

- First initiative was unsuccessful conference in Paris in 1851, which was intended to reach agreement on how to manage cholera.
- Small pox eradication was in 1979, was early & highly successful joint action initiative.
- Another example was Alma Ata conference in 1978, aim was health for all by 2000.
- WHO plays a central role , we have seen major progress related to infectious disease, nutrition, reproductive health
- At the global level, intergovernmental organization such as united nation plays an important role.

Key Learning's

- 1) Global health plays an extremely important role in both the security of US population & Global security as well
- 2) As we see the world & economies become globalized including commerce & international travel. It is now the high time to think about health in global perspective.
- 3) As we see the today scenario , like rarely a week or day goes without the listening of news about the emergency heath threat somewhere in the world.
- 4) NCDs like stroke , heart disease are growing increasingly fast & no. of deaths from infectious disease such as malaria is decreasing day by day.
- 5) Every country or developing countries must deal with dual burden of disease. They are taking necessary steps to prevent & control infectious disease , while same time also explaining the health issues from Non communicable disease.
- 6) In developing countries , social & economic condition changes their health system & surveillance improve, & these countries are now more focused to prevent NCDs , mental health & substance abuse disorder.
- 7) Expanding international trade introduce new health risk
- 8) Water and sanitation is very important for health , and many countries are still behind to achieve that , eg – Africa

THANK YOU