Summer training Report

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PART- 1

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List of Abbreviations-

COVID 19	Corona virus disease 19
WHO	World health organization
NHM	National health mission
MOHFW	Ministry of health & family welfare
SARS	Severe acute respiratory syndrome
MERS	Middle east respiratory syndrome

Abstract

Corona virus is one of the family of viruses , which cause severe illness in Animals as well as in humans . COVID infects in Human which is called respiratory infection , it has its range from mild common cold to severe as Middle east respiratory syndrome (MERS) and Severe acute respiratory syndrome (SARS). The most recent discovered of virus is corona virus disease COVID 19. This new virus was unknown before the outbreak is began in Wuhan, china in December 2019.

The common symptoms of Corona virus are fever, tiredness, and dry cough. In Some patients it has been seen headache and pains, nasal congestion, runny nose, sore throat or diarrhea. Old people and those who already having medical complications like cardiovascular disease, diabetes is more likely to be affected by this virus.

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.

In this pandemic, the major step of prevention is social distancing and proper use of mask and wash your hands for 20 seconds or using alcohol-based hand sanitizer. The government has taken major steps to fight against this Disease. The data in this paper is used from WHO, MOHFW and state government sites

The purpose of this study is to present a systematic review to see the impact of COVID 19 in the state Haryana, India & what are the preventions / measures taken by the government to tackle this Pandemic.

A Comprehensive Analysis of COVID-19 Situation in Haryana ,India

Introduction-

What is Corona Virus-

In 2019 world famous Huanan seafood market in Wuhan, China on December 10,2019 was first infected person with a virus from an animal. The Ministry of Health & Family welfare (MOHFW) said, the country's first case of COVID 19 was detected in India was in Kerala, southwestern coastal state. According to World health organization this virus disease continues to spread & represent a very serious issue in public health emergency. In the last 20 years, several viral epidemics such as MERS and SARS were identified. Severe acute respiratory syndrome (SARS) was reported in 2002 to 2003 and H1N1 influenza were recorded in 2009. MERS (middle east respiratory syndrome) was first identified in Saudi Arabia in 2012.The corona virus symptoms are very common like (flu), fever, tiredness & dry cough. About 80% of patients of COVID recovered without getting special treatment. To prevent this disease washing hands with hand wash frequently, using alcohol-based sanitizer are the most effective way to fight against this disease. People should avoid touching face,& and avoid gathering .Social distancing is the foremost important measure to prevent this disease. People who are sick or may having any of these symptoms, need to isolate themselves & avoid contact.

Haryana COVID- 19

The first case in Haryana was reported on 17th march by the health official, COVID 19 was declared epidemic in Haryana. A 29-year-old women from Gurugram district was tested positive. She is an employee of a Gurgaon based company and had recently travelled to Indonesia, Malaysia. People with travel history in last 14 days to a country where COVID cases has been reported must report to the nearby hospital & to call free helpline no. 108 1, so that the necessary measure steps has been taken. 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. They are advised to use sanitizer frequently. In suspected cases of COVID 19, the authority has a permission to forcefully admit the COVID patient in the hospital if they deny for admission or isolation. This strict action has been taken by district administration to take steps for containment of the disease after the case is reported. Till 31st march there were 1578 people in Haryana who are under observation, out of which 1555 have a travel history to affected countries. 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.

Several measures have been taken by the government of India to fight against this outbreak, WHO, MOHFW NHM Haryana were given guidelines to follow during this outbreak. Medical mask and respirators such as N95, FFP2 are recommended for the healthcare workers when they give care to the COVID patients.

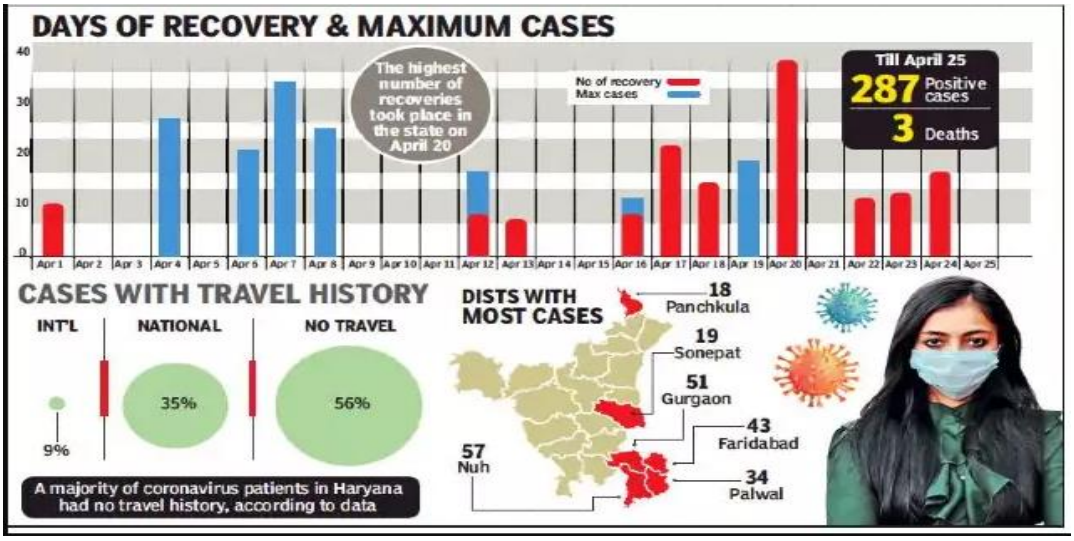
OBJECTIVE-

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

Haryana faces an outbreak of virus, COVID 19 and this state has huge ups and down with sudden one after one positive case were detected. 3 deaths have been reported till 25thApril 2020

As it is shown in the below picture, there were 287 positive cases & 3 deaths occur till 25th April2020. As we can see the cases with travel history, according to data 9% have

international travel history in last one month. 35%have national or within their country travel history, and 56% have no travel history in last one month.



According to data, district with most cases – Faridabad -43, Gurugram -51, Panchkula - 18,Sonipat – 19, Palwal – 34, Nuh – 57 cases of COVID . On 17th April, Haryana saw 21 recovery of novel corona virus cases. On April18, 14 patients and On April 20th, 37 patients were cured & single discharged in a single day.

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 .

- Till 12th July 2020, the mortality rate in less than 1% in below 35 years- Haryana health Department.

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

76% cases of COVID 19 is male in Haryana, As on 25th April data suggesting that there are 273 positive cases in Haryana that 76% are male while 22 % are female.

And there were 74 cases of People in the 25-34 age group, 53 cases were in 15-24 age group and 22 cases lie on the 65-74 age category, while no patient of COVID was age above 85.

Cases by age group – released by Health ministry on 25th April

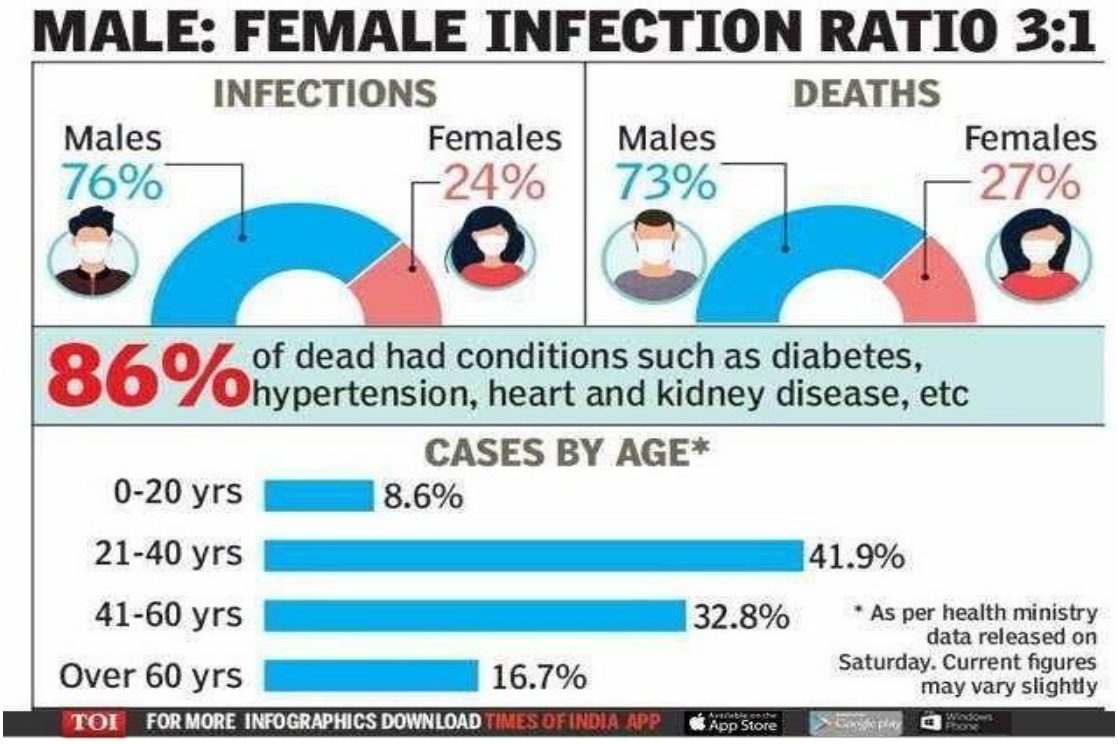
0-20 years - 8.6%

21-40 years - 41%

41-60 years – 32.8%

Over 60 years- 16.7%

86% dead had condition of Diabetes, Cardiovascular disease, hypertension, kidney disease etc.

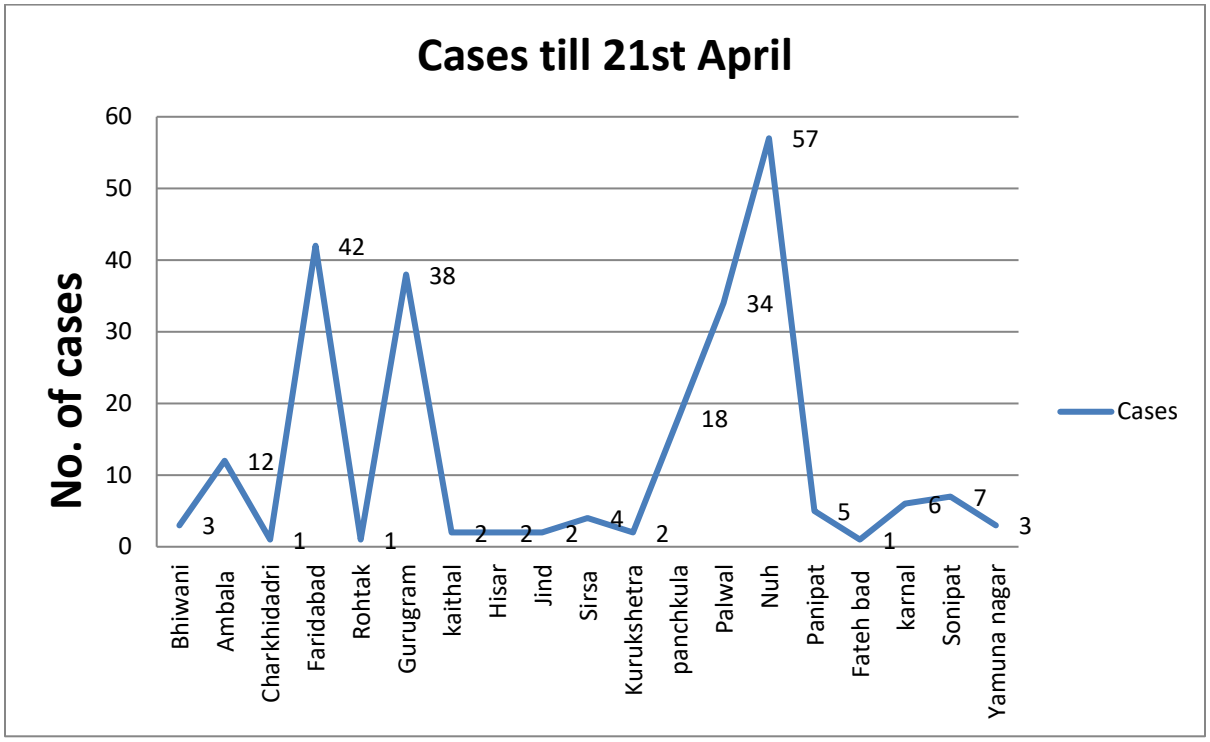


3) To study Corona virus Situation analysis in Haryana state of India

There were 14 new corona virus cases were reported on April 29th in the state, according to MOHFW. Now the total cases of corona virus in Haryana jumps to 310 in which, 209 have been recovered patients and 3 have been passed away. when we see the district, wise breakup is available for 240 of the total 310 cases reported in the state. Nuh district has the highest number of COVID 19 cases, at 57 confirmed infection. The table below shows the confirmed case for all the districts till 21stApril,2020.

District	**Cases**
Bhiwani	3
Ambala	12
Charkhidadri	1
Faridabad	42
Rohtak	1
Gurugram	38
kaithal	2
Hisar	2
Jind	2
Sirsa	4
Kurukshetra	2
panchkula	18
Palwal	34
Nuh	57
Panipat	5
Fateh bad	1
karnal	6
Sonipat	7
Yamuna nagar	3

Nuh district has the highest number of 57 confirmed cases till 21th April.



There are 4 districts of Haryana which is worst affected by COVID 19,Gurugram,Faridabad, Nuh & Palwal. The prime minister declared the first whole nation lockdown on 23rd march till 15th April. The Haryana chief minister, extend the lockdown after 15thApril, as the case increases day by day. The Haryana chief Minister divided the state into three zones; red, orange and green on 15th April. Red zones are the worst affected area, where maximum no. of cases was reported, orange zone means in the last 14 days no new cases has been detected & green zones where no cases of COVID is found.

But after lockdown 2.0, from 20th April Gurugram status of COVID 19 has been slow down the case is not rapidly increase in this district.

On 1st may 2020, for those who are working in hospitals and living in Gurugram, arrangement has been made there itself (in Delhi). Restrictions are applicable to the police

too. Delhi- Haryana border sealed by the government of Haryana. Those people who cross the border need to download the Arogyasetu app which is mandatory, the thermal scanning, the arrangement of rapid testing are also be done at the Delhi Haryana check post.24-hourvideography will be done on check post.

From 5thmay, Gurugram& many districts in Haryana was declared in orange zone, as new cases were not found rapidly and doubling rate slows down. When many areas come under orange zone, the construction work, bank will permit to open with 50% of their employee and labors to work. Shops like general store, medicine & vegetable vendors will open from 9 to 5 pm.

Status of COVID 19 in the month of June –

There were 168 new cases of COVID 19 reported on June 1. The total new case of COVID reported on June 1. The total case 2091 , out of which 1048 have recovered & 20 passed away due to COVID 19.

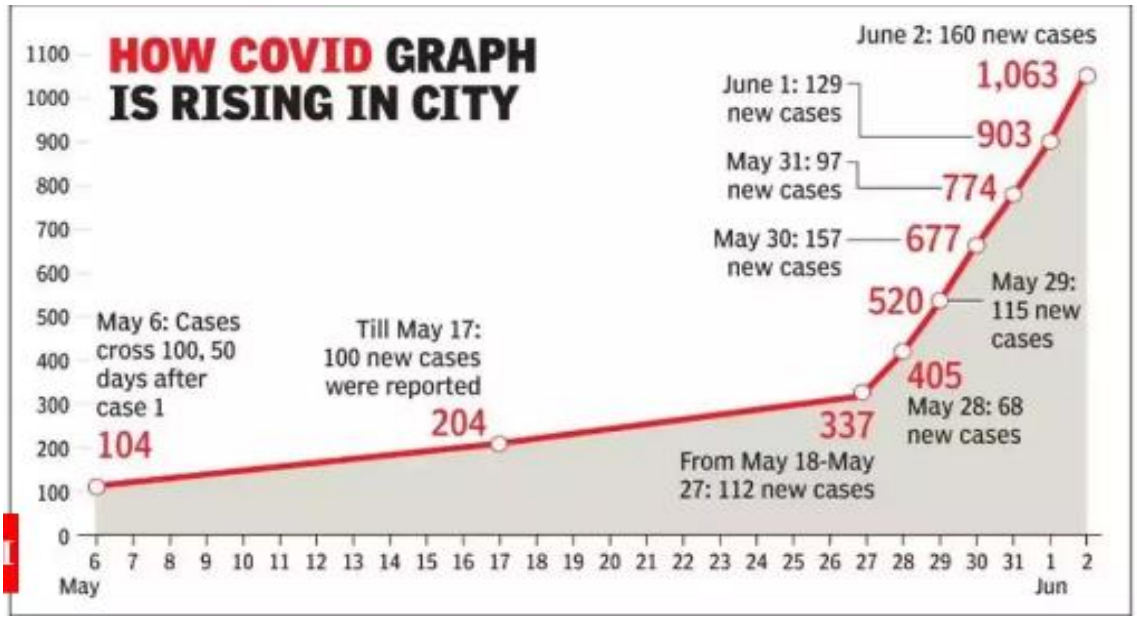
District wise breakup , total 2091 cases reported the highest no. of COVID 19 cases at 57 confirmed infections. On June 18th cases still rising fast in Haryana, jump up to 29% in Faridabad in just two days. The state data shows that highest jump in the Corona virus death in over the past week , the toll nearly doubled in nearby Delhi. 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.

In Faridabad, the total cases rise from 376 to 929 from 31st may till 11th June, with 22 fatalities in the district. In Sonipat district the case rise from 199 to 502 from 31st May till June 2nd week .

chief medical officer of Gurugram , said in media that the number of COVID patient who died in this district was age above 60 years. And those 19 patients who died have co- morbid conditions – having diabetes, cardiac arrest and other disease.

There were approx 75 lakhs people were living in the four districts of Haryana in Gurgaon , Faridabad , Sonipat & Jhajjar and around 2600 active cases in there area, that's prove that it is not a community spread .

As cases continue rising in NCR district , state health minister Anil vij said- the rate at which infections were spreading in areas adjoining the national capital
(new Delhi)



This graph shows rising in the case of COVID 19 in Gurugram district.

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

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.
- Apart from this, one announcement was made by PM, for observing ' Janta curfew' on march 22, 2020 , on that day all public transportation in that state will remain suspended from morning 7am to 7pm on that day .
- From 23rd march national lockdown 0.1 started till 15th April. In which all schools , universities and religious places will be closed .
- The role of the employee in this situation will help to create awareness among people to take the necessary precautions and to maintain the social distancing.
- 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.
- The quarantine facilities &isolation wards are also set up by the police department.
- Dry rations would be distributed by the Anganwadi workers at their door steps in rural areas.
- All biometric system in shop, companies has been suspended for further notice.
- 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.

Literature Review-

TITLE

1) 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) Chloroquine and hydroxychloroquine : Clutching at straws in the time of COVID 19?

-Ullas Batra, Mansi Sharma, Pallavi Redhu

Published on-25th April 2020

Current status and future directions

The food and drug administration approved the emergency use of HCQ for the pandemic disease COVID 19 on march 28th 2020. Chloroquine andHydroox chloroquine may be use as part of investigation protocol for the pre and post exposure prophylaxis and for the treatment as well, this is according tothecenter of disease control and prevention. These drugs till now has not been approved by the European medicine agency.

At the present scenario the national and main task force of India for COVID 19 recommends the prophylaxis in:

- Asymptomatic Healthcare workers , nurses & staff are taking care of COVID patients when the case is confirmed than , they give 400 mg of prophylaxis taken orally twice a day on first days then followed by once in a week for next 35 days.
- Asymptomatic household contacts for the laboratory confirmed cases- that the positive COVID patient should be given 400 mg of prophylaxis twice on first day then followed by once a week for the next 20 days.

Conclusion

In Rajiv Gandhi cancer institute & research centerDelhi , the department of oncology awaits the result of randomized trials to know the benefits of chloroquine /hydrocholoroquine as a prophylaxis , for the treatment of COVID 19 , the reaction of prescribing these drugs (especially for prophylaxis) for one must be avoided .Simple and effective measure has been taken such as social distancing & regular hand washing are the foremost important to fight against this COVID . Physicians should adhere to the medical advisories regarding the drug usage and if it's not permitted for the treatment of established cases in India, then the clinician must follow the advisory guidelines regarding dosage and duration of drugs. There is pending clarity on this, we recommend constant vigilance regarding preventive measures to minimize the risk of getting infected. However, the recently published non randomized data showing the good outcomes of 1061 patients with combing of HCQ &azithromycin, the mortality rate is only 0.5% in the group of older patients. So, we hope this turns a raft and takes the human population safely from this time.

3)Detection of corona virus 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 data which 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.

4)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
- 5.7% - cataract surgery
- 4.9% - opthalmologies , involved in tumor/ retinoblastoma care
- 12.1% (42/347) only examine emergency not operating.

Conclusion-

This pandemic will change the practice & its ways forever , new practice of work, service should be adapted. Various changes will be occurred like in Management policy clinics, hospitals, appointment schedule , active screening , declaration of patient health & some other policies as well. The Indian ophthalmology community faced challenge to get back in serving the society at a very large secure way , and new guidelines and regulations are need to adapt in practice to help patient without compromising on their safety.

METHODOLOGY-

Study approach- Quantitative Approach

Research design- Descriptive cross-sectional study

Data source – (MOHFW) Ministry of health and family welfare and World health organization (WHO), National health mission Haryana (NHM)& other official sites.

Study period- April – June (2020)

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. In brighter side we can see the resumption of economic activities seen in the COVID lockdown in every country. 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. Haryana chief minister appeal to the migrant's workers to not to leave the state instead they can start working in manufacturing units, which with precaution allowed by the government . He also added; that COVID situation in the state was very much better.

The first special 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 and the 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.

Haryana government doubled the salaries of healthcare officials and workers to fight against Covid-19

The government of Haryana has decided to double the salary of all the health care workers who are taking care of COVID patients & tackling the COVID outbreak . Chief minister announces this through video conferencing, Haryana was the first state to take this step to motivate health workers to continue with fight against COVID.

National healthy mission Haryana (NHM) taken steps against Corona virus -

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

Positive case of COVID 19 rate – 1.36%

Recovery rate - 43.85%

Mortality rate- 1.41%

Doubling rate (days) - 10

The Detailed Status of Surveillance Activity for COVID-19 as on 12th May, 2020 is given below:

Cumulative number of persons put on surveillance (including contacts) till date	37592
Total number of passengers/ persons who have completed surveillance period	23805
Total no. of passengers/persons who are currently under surveillance	13787
Total Number of Samples Sent	62377*
Total Number of Samples found Negative	56440
Total Number of Samples - Result Awaited	5157
Total Number of Samples found positive including 14 Italian nationals	780
Total positive COVID-19 patients recovered/discharged till date	342
Total active COVID-19 patients	427
No. of Deaths	11
COVID-19 Positive Rate	1.36 %
Recovery Rate	43.85 %
Fatality Rate	1.41%
Tests Per Million	2461
Doubling Rate (Days)	10

Expected outcome of COVID 19 in Haryana-

The challenges of economic growth in Haryana due to COVID 19 outbreak is largely affected to many companies. On 7thMay, 2020 the webinar was conducted with the representatives of companies having industrial & official setup in china.

This webinar was attended by many industrialist and large MNCs like Yazaki India, Johnson matheeyindia , Dell Danisco Pvt limited , Ascends first space , Jyoti apparels , hind terminal UAE , coca cola & reliance gathered during webinar . During webinar, a detailed structure was held on to impose special policies by the government , that would help to make Haryana feasible destination for immediate shifting of the manufacturing units. There are various suggestions made by the industrialists included addition of IT electronic products in the list of essential items, addition of medical electronic components in IT & ESDM policy of the government of India is to increase incentives to industry on manufacturing of these essential items.

Haryana requests Delhi to issue special passes for government employees-

56% of COVID cases in the national capital region district of Faridabad ,Gurugram, Sonipat & Jhajjar had Delhi connections. The Haryana government told Delhi court that they would allow the movement of health workers from delhi only on the issue of passes

The borders connecting Delhi should now de –sealed for people who are having emergency services & for the medical professionals –said DC. Unregulated movement at the Gurugram Delhi borders will not be allowed. On 11th may as per the MHA directions, the state government has involved in the procedure of movement of passes (e pass) which will be given only to the medical professionals.

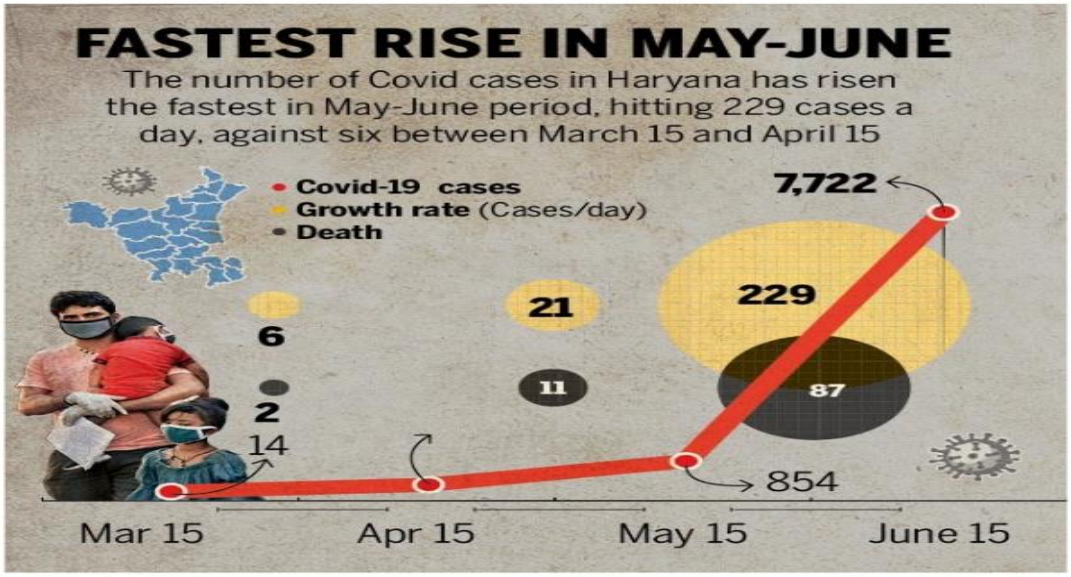
On the first day of e-passes they provide around 55 passes to medical professionals who are living in Haryana NCR district & they are working in AIMS; new Delhi will be allowed their interstate movement around the national capital.

The neighboring state told the court that the majority of cases in the border of district Haryana are mainly due to their Delhi connection, it became crucial of the public to impose strict restrictions were made on the movement of people.

Haryana went from bottom of COVID state to top 10 cases just in 3 months- till 15th June 2020

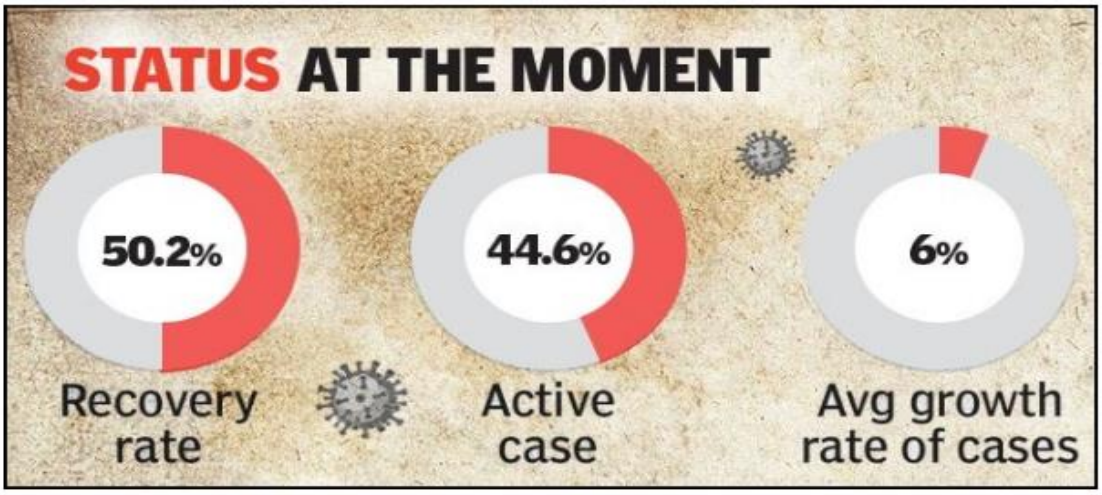
As per the Government data shows Haryana ranked 9th in terms of COVID -19 cases, in the terms of getting above 10,000 cases in June.

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



The analysis has been done through above picture , the cases of COVID 19 from 15th march to 15th June has been shown , having just 14 cases on march 15th to 7,722 cases and 87 fatalities on June 15th .

The growth rate of COVID 19 from march 15th to April 15th was around 6 cases a day with just 21 cases in 30 days.



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.

So the question arises , Why Haryana saw a sudden rise in case from last month? –

- Mismatch of data in private laboratories
- After unlock 0.1 , factories were open , which results that Gurugram & Faridabad have 50% of cases in Haryana.
- According to the data 80% cases in Haryana is recorded in last month is from national capital.
- 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.

I. After COVID rises rapidly in the 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.

II. 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.

III. 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-

As the COVID 19 cases increasing day by day , and no vaccine is develop for this disease till now In Haryana till 13th May the total case is 780 , active case is 438 , recovered is 342 , and 11 deaths were reported .So government is taking all the necessary precaution and preventions to fight against this virus. As Haryana is having around 500 Cases till 1st week of May, and 6 deaths were reported due to corona virus, there is a complete lockdown in whole India till 17th may.

- 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.
- Non-essential travel should be avoided.
- Trains,buses, are permitted with MHA guidelines and 40 % people can travel in one sitting.

- Flights has been postponed till the lockdown, only office work in aviation industry can operate with 30% of the staff members.
- Hospitals should follow necessary protocol related with novel corona virus, management as prescribed and should restrict family,friends, children visiting any patient in the hospital. Apart from this hygiene &physical distancing should be maintained.
- For E-commerce, special protective measures for delivery men / women in online ordering services. Only essential items will be delivered by E-commerce sites in red zones
- . These all are the measures which was given by Ministry of Health and Family Welfare. This should be followed by every individual during this lockdown to fight against the novel corona virus.

Conclusion-

March- 1st case of COVID is reported on **17th march 2020,** Haryana and Himachal Pradesh put under complete lockdown till 31st march.

- After the curfew in Haryana, Punjab & Himachal Pradesh have been put under complete lockdown from 22nd march till 31st march. Haryana chief minister announces that complete lockdown from 22nd march, morning. Seven districts of the state Haryana had been put under lockdown till 31st march.
- No public transport including taxis , buses , auto will operate. Only the emergency transport will allowed for hospitals. All workshops & go down will be closed.
- There is no travelling inter state & intra state public & private transport flights will be operate baring essential services, while private vehicles can ply only in case of medical emergency for only essential services. Hospitals , shops selling vegetables , meat , fish & medicine , home deliveries will continue.
- Haryana government has decided to close gyms , swimming pool , cinema hall, clubs & restaurant in whole state till 31st march, in the COVID infection threat

April - From last month approx., due to this Pandemic lockdown has been imposed in the state. The maximum numbers of positive cases of COVID 19 were reported during 4 to 8th April 2020.

- On April 4, there are 84 positive cases were reported & 167 positive cases reached by on April 8, showing tremendous increase in just few days. On April 4, there are 26 positive cases & April 6 , 20 cases , on April 7 , positive cases reached to 33 & 24 fresh cases were reported on April 18th.
- However, the condition in the state is going to be worst from third week of April, where many people tested positive from the virus. On 22nd April, only six districts, Gurgaon (51) , Faridabad (43) , Panchkula (18), Nuh (57) Palwal (34) & Sonipat(19) have majority of cases positive.
- In the month of April 0.2 lockdown has been started, the lockdown is extended. On the last week of April Haryana recovery rate is reached by 66.55% .

May - cases in Haryana was increasing but the recovery rate was also increasing , so the government decided to open the Delhi Haryana borders , and on may different zones has been decided by the government, Red , orange and green zones.

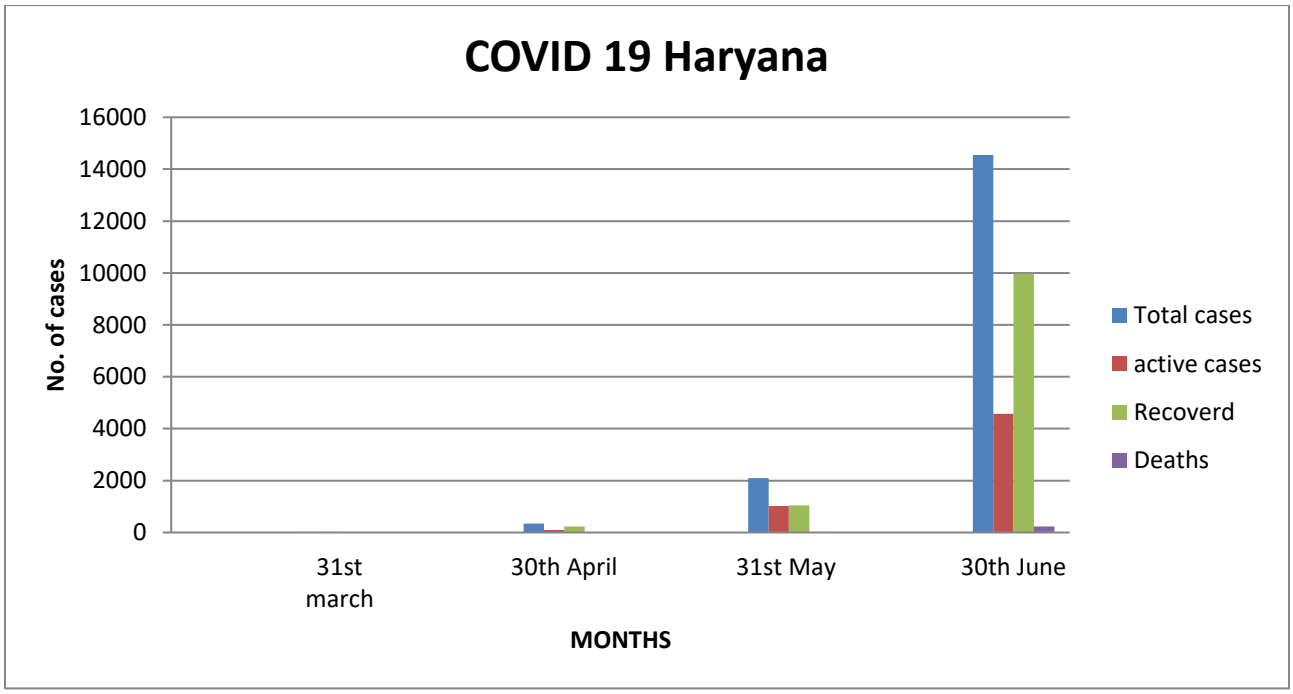
- The lockdown is again extended because the cases were increasing day by day , to the threat of virus , lockdown is extended again for 15 days from 1st may to 31st may , Haryana government , Home minister suggested, and justified the strictness of Delhi borders , pointing free movement lead to surge in corona virus cases in the state.
- In mid month of may Haryana reported over 1500 cases including 9 deaths. State government said , strictness will maintained , giving more relaxation at this stage lead increase in cases. 70% to 80% cases are from national capital.
- On May 29th , Haryana recorded the highest single day jump in COVID cases with 217 fresh infections. In which 115 were from state worst hit Gurgaon district according to health department. Gurgaon has cumulative 520 cases.
- The total COVID cases in the state at 1721 of which 940 recovered and rest were under treatment. Of 19 covid related deaths in the state so far , 7 in Faridabad & 3 in Gurgaon , according to state health department.

June – Haryana 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.

Cases in Haryana month wise-



As we can see the above 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.

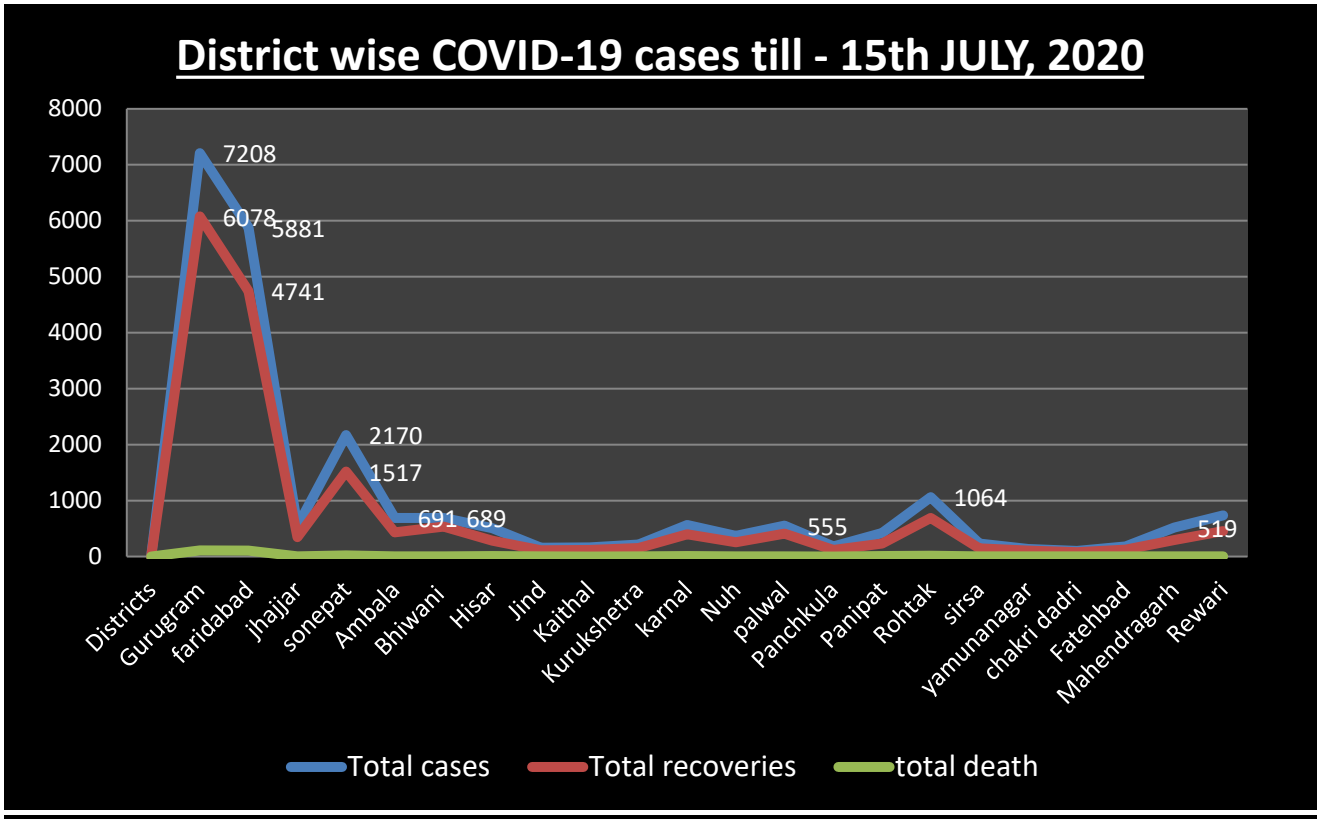
- Till 31st march total cases – 21 with 0 recovery & death
- Till 30th April total case- 339 , active case-101 , recovered -235 , with 0 fatality
- Till 31st May total cases -2,091 , active cases- 1,023 , recovered -1,048 & fatality – 20
- Till 30th June total case -14,548 , active cases - 4,576 , recovered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

Till 31st may before lockdown 3.0 the cases has been increasing rapidly 3 times every day in month of June , the doubling rate is also goes down and when unlock 1.0 is stared from 6th June , the case increases significantly.

June was badly hit month of COVID 19 in Haryana.

<u>This graph depicts the COVID 19 cases till 15th July- District wise cases – total cases, recovery, death.</u>



This graph analysis shows that Gurugram is the worst hit district by COVID 19 followed by Faridabad , sonepat & rohatk .

Gurugram has 7208 total cases till 15th July 2020 , with 6078 recoveries and 1130 active cases and fatality is 110 .

Faridabad has 2nd hit district by the virus which is 5881 total cases with 4741 recoveries and 1140 active cases with 104 fatality reported till date.

Sonepat is 3rd district which worst hit by COVID 19 – total cases 2170 , with 1517 recoveries & 24 fatalities till 15th july .

Rohtak is followed by Sonepat – total cases 1064 with 689 recoveries & 16 fatalities till 15th july, 2020.

Total cases- 23306

Total recoveries- 17667

Total active cases- 5320

Total death – 319 (Male- 234 & Female- 85)

Recover rate – 75.80%

Fatality rate- 1.37%

Doubling rate (days) -21

This data is till 15th July , 2020

Recommendations-

1 . Control Measures are recommended that focuses on prevention , through regular hand washing & cough hygiene .

2. For International Passengers , the restriction of travelling should be imposed & contact tracing should be implemented.

3 . Every workplace should have a proper sanitization rules should be followed and social distancing should be maintained.

4 . People should avoid close contact or visit any crowded places.

5. Travelers are advised to follow food hygiene practicing .

6. In every state , quarantine centre should be made for the people coming from other state.

7. Wearing Mask should mandatory for every individual when going outside.

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PART 2-

Online Course

AN INTRODUCTION TO GLOBAL HEALTH

Table of Content

Online course

Title- An introduction to global health

Website – Coursera

Organization- University of copenhegan

Duration – 21 hours

INTRODUCTION -

Global health is the basic understanding of the health care in an international & interdisciplinary context. Global health teaches both medical and non medical area like sociology , environmental factor, economics etc. World health organization is the most prominent agencies focused on advancing global health.

This course provides an overview of the most important health challenges facing the world today. This course helps me to know the challenges we are facing for many years , and how can we fight against them . In this course, international strategies & program promoting human health will be highlighted & global health governance structure is made.

There are 6 definite global health issues –

1) Pandemics

2) Environmental factors

3)Economic disparities

4)Political factors

5)Non- communicable diseases

6) Animal health, food sourcing and supply

OBJECTIVE-

1) Defining and 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 .

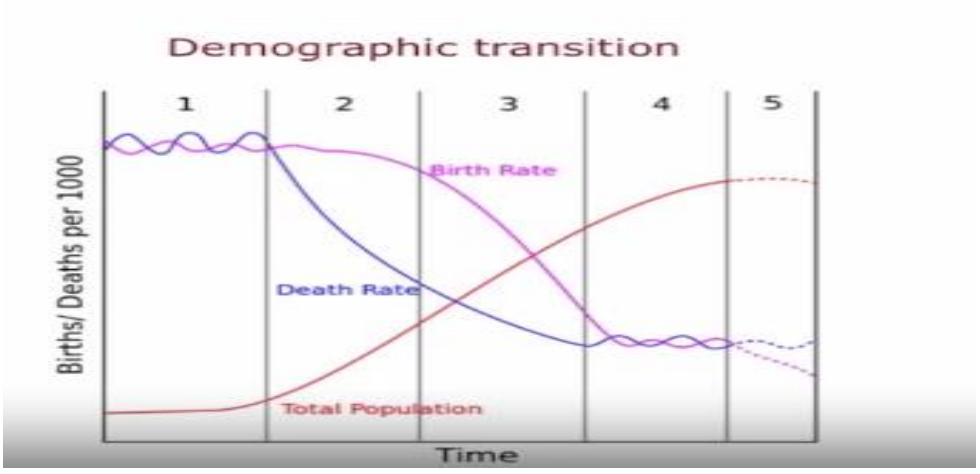
Epidemiological & demographic transition-

Diabetes and cardiovascular disease share a same risk factors .

- Diet
- Physical activity

Major cause of Child death-

- Malaria
- Pneumonia
- Diarrhea
- Meningitis
- Measles
- HIV
- Tetanus.



This picture depicts that trend of decline mortality rate & decline birth rate.

Emerging NCD among adults-

- Cardio vascular disease
- Diabetes
- Depressive disorders
- Some cancers
- Low back pain

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

Eg- A 5 years old child died , we would need to know the longest life expectancy world wide of child , being 5 year old is 86.4 years . so , that measures -81.4 is YLL.

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- transmission here is specifically the ageing populations increasing life expectancy

Urbanization & consumption pattern . In 2007 approx 50% of the population live in urban areas. urbanization had major changes like diet , physical activity , alcohol and tobacco.

Economic growth –It will affect the living condition in different ways , like lower exposure to infection, higher housing quality, medical technology & access affordability of food.

Change climates & disasters- There is lack of rain and subsequent drought , agriculture production. In disaster scenario ; land slide , earthquake & tsunamis .

War& conflicts- It affects the life in both direct and indirect way of health.

Innovation in health care & technology

Intensification of agriculture- it may change by change in the living condition for rural farmers for malaria mosquitoes and vector of diseases .

natural resources

Nutritional transition –Increase n overall intake , increase in fat intake , changes in composition of carbohydrates, decline in diatery fibers and micro nutrients , increase in salt increase .

DISEASE SPECIFIC RISK FACTOR

Genitics , lifestyle choices , living conditions

Life style diseases- NCD , cardiovascular diseases , chronic pulmonary diseases , diabetes , cancer , infectious diseases , communicable diseases .

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

Determinants – environment , socio economic and climate.

Disease of poverty – Malaria , Tuberculosis , hunger & scarcity , malnutrition , under nutrition

Most of the disease are not always starting among poor , they could start among rich & the sedimenting slowly down to the poor . we all know that HIV was the first acknowledged among relatively well off north americans , Europeans , african ministers & their sons .

Obesity used to be sign of wealth , obesity has become a problem for low income

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.

2) INFECTIOUS DISEASES-

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

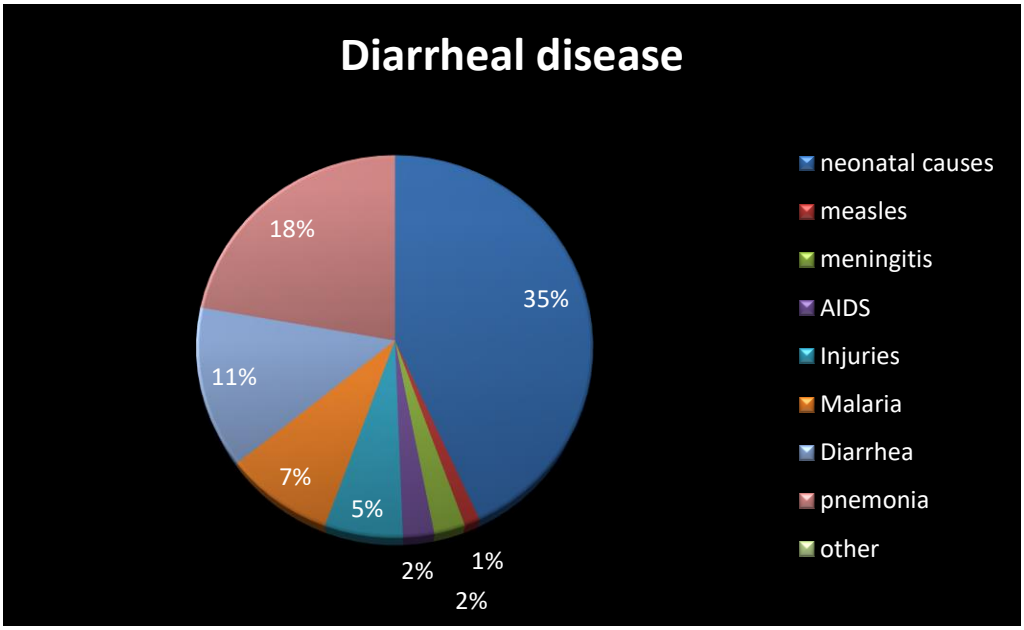
malnutrition . In Europe in 19th century about 5 – 10 % died from TB & tropical malaria and even vector borne diseases . The first development was an antitoxin derived from the horse that was injected with microbes & then withdraw the serum & inject into someone you want to protect from microbe , to so called antitoxin . pierre paul emile roux , they discovered anti diphtheria serum in 1853-1933.

Now , malaria disease is decreased now , we are going down in child malaria infections but with development , we also getting some new challenges. Eg – Dengue fever cases .

INFECTIOUS DIARRHEAL DISEASES –

Childhood mortality indicates diarrheal disease is still third leading cause of death in children under five . Approx 2000 children die each day from diarrheal disease , that is more than AIDS , malaria & meseals.

It is estimated that 58% of diarrheal disease death can be describe to unsafe water , poor sanitation & hygiene



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 .

Most diarrheal disease are preventable and treatable

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 . Despite of 20 years of major efforts an effective HV vaccine remains to be discovered. WHO & UN led ARC rollout program that started in 2001 as part of mandate for global fund . ART roll out program saved 900.000 lives in 2012.

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

3)NON – COMMUNICABLE DISEASE -

A group of disease characterized by the non – communicability . Over last 200 years , the majority of disease burden in the global population has in fact been from infectious disease problem of nutrition , water and sanitation . 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 FACTORS OF MAJOR DISEASES

1)Tobacco – Use of tobacco is legal , 5 million people killed by this every year , & one person dies every minute.

2) Alcohol - 280 deaths every hour by alcohol consumption , age between 15 to 29 years people are involve in alcohol. It is the 3rd largest risk factor in the western pacific & the Americans .

3) Unhealthy Diet –In 2010 , higher rate in global people

4) Physical Inactivity – The main cause for approx 1 in 4 cases of breast & colon cancers a third diabetes & heart disease burden .

NON COMMUNICABLE 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

DITERMINANTS & DRIVERS OF NCDs–

NCD are linked with –

- Poor neighborhood
- Lower standards of housing
- Poverty
- Low level of education
- Unemployment

Social determinants of Health –

- Economic development & stability
- private sector
- Environment resource
- Political sectors.

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 . 90% of diabetes occurs in low & middle income countries . 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%.

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 .

4)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 .

ABORTION STIGMA- WHO estimates – 13% maternal deaths as due to unsafe abortion . 1 in 5 women who have an unsafe abortion have RTI . unsafe abortion called infertility . In 2008 , around 47000 women lost their life due to abortion

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

.**CONTINUUM OF CARE** –

Continuum of care means that instead of focusing on one event at one time of point and at one place you should try to look it in the context of everything that happened before and after .

The continuum of care refers to the idea of continuity of care for the individual at different time point in life like during adolescent , pregnancy , birth , postpartum and as a child & throughout the health system at community level .

5) ENVIRONMENTAL HEALTH CHALLENGES –

24% of the global disease burden is liked to environment risk factors . In 2006 report disease attributes to modifiable environment factors include parrhoeal disease , lower respiratory infection , malaria & un intentioned injuries . 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. Around 770 million people depend on unimproved drinking water source. Most people with lack of safe water supply live in Africa south of the Sahara .

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 -

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

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.

Migration includes push factor and pull factor

Pull factor – economic incentives, Human right protection

Push factor – human rights abuse or famine.

Formal & informal barrier may affect migrants' access to health care.

Migrants health is linked to equity in health & human rights in health. Migration & ethnicity are two complementary key concepts.

6) Food & Nutrition –

Under nutrition ⟷ Infection

It means undernutrition leads to infection & infections leads to undernutrition. Undernutrition potentiates the effect of infections. several million children die each year due to undernutrition. Infections impair nutritional status through reduced appetite & reduced absorption of nutrients as well as increased utilization & excretion of nutrients. The effects due to acute face response accompanying generalized infection but diarrhea & ulcers many also contribute. Undernutrition 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.
- Zinc – no body store of zinc, so we needed almost daily.
- In contrast, children who already have diarrhea may benefit from zinc supplement for couple of weeks, as it reduces severity & duration of diarrhea – by WHO
- TB & HIV lead to a greater loss of lean mass, which is muscle & organ tissue.
- Lack of energy = inadequate weight gain
- Lack of micronutrients & protein = energy stored as fat

Diabetes & Maternal and child health –

Maternal health & fetal development plays a critical role in diabetes. One of the conditions are unborn child can be exposed to is maternal diabetes. The international diabetes federation estimated that globally around 60 million women of reproductive age have diabetes. Gestational diabetes developed in women when they are pregnant. In India around 4 million pregnant women has gestational diabetes. If mother has diabetes during pregnancy there is high risk that the body will be very big called Macro somia. A big baby increases the risk for difficult or prolonged labor, which result in severe injuries to the baby.

Gestational diabetes, usually disappear after pregnancy but have risk to have type 2 diabetes in later life also increases risk of cardiovascular disease .

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.

There should be promoting sales of sanitation facilities. Schools are perfect institutions for promoting sanitation.

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.

7) NCDs & Health care system –

World health organization has three levels – global, regional &country, there are five other regional offices & then numerous country offices that have direct national response. UN adopted the declaration has translated into setting global agenda with global action plan, setting a monitoring framework identifying what are the targets and what are the indicators that country should be working to collaborations with the UN agencies. The current discussion is about how to being the UN agencies together such that UNDP &UNICEF, UNIFPA & others rams of the UN family are coordinated with WHO, that happens in a global level.

HEALTH IN ALL POLICIES-whole of government approach, whole of society, intersectoral action has been around for last 30 years. The trade discussion that are taken, agreements b/w countries on what they buy & sell to each other, foreign direct investment, levels of employment, access to safe and decent jobs, levels of education, income distribution.

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.

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.
- In 1948, the division global shared government of the response to health challenges to finding issues, agreeing on common approaches, brining political attention, raising necessary funds, developing the adequate workforce capacity.
- 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. But many issues remain including concern about pandemic which appear more likely with increased mobility of population.
- At the national level government plays a central role , adopting& implementing laws, collecting taxes, undertaking programs, civil society, professional organization for profit industry as well as population of the countries have role to play.
- At the global level, intergovernmental organization such as united nation plays an important role.

FRAMEWOK CONVENTION ON TOBACCO CONTROL –

1. Response to increasing tobacco use.
2. 2013 there are 6 million people globally.
3. By 2030- tobacco will 8 million people.
4. 2014 – 176 countries around the globe , which is about 90% of global population have ratified this treaty.

METHODOLOGY –

Videos lectures

Reading materials

Quiz

Practice exercise

Key learnings–

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