Summer Internship

At

IIHMR, Delhi (April 1st to 31st May)

A Report

By

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Postgraduate Diploma in Hospital and Health Management

2019-2021

IIHMR DELHI

Acknowledgment

On the very onset of this report I would like to extend my sincere obligation and gratitude towards all the persons who helped me in this endeavour. I would like to express my special gratitude to my professor and mentor Mr. Sumees Kumar who gave me the opportunity to do this project and for his valuable guidance and support throughout my summer training period.

I extend my gratitude to IIHMR Delhi for giving me this opportunity.

I also acknowledge with a deep sense of reverence and express my gratitude towards my mother and members of my family, who has always supported me in all possible ways to complete this training successfully during this difficult time of Covid-19.

Many people especially my classmates have made valuable comments suggestion on my paper which gave me inspiration to improve quality of my work. So at last but not least gratitude goes to all my friends who directly or indirectly helped me to complete my paper.

Any omission in this brief acknowledgment doesn't mean lack of gratitude.

Thanks

Dr. Arpita Dhawan.

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Abbreviations

1. NCDC- National Centre for Disease Control
2. IDSP- Integrated Disease Surveillance Program
3. SM&EC- Statistical Monitoring and Evaluation
4. PBA- Planning Budget and Administration
5. NCD- Non Communicable Disease
6. CEOH- Centre for Environment and Occupational Health
7. CME&VM- Centre for Medical Entomology and Vector Management
8. EIS- Executive Information Centre
9. MPH- Masters of Public Health
10. WHO- World Health Organisation
11. NACO- National AIDS control organisation
12. EQAS- External Quality Assessment Scheme
13. NPCDCS- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
14. NHP- National Health Programme
15. RFTRC- Regional Filaria Training and Research Centre
16. JE- Japanese Encephalitis
17. UT- Union Territory
18. DA- Dearness Allowance
19. CPC- Central Pay Commission
20. SSU- State Surveillance Unit
21. DSU- District Surveillance Unit
22. PCR- Polymerase chain reaction
23. RT-PCR- Reverse Transcription Polymerase Chain Reaction
24. SHOC- Strategic Health Operations Centre
25. H1N1- Hemagglutinin and Neuraminidases
26. IHR- International Health Regulations
27. MCTS- Mother and Child Tracker System
28. FHW- Female Health Worker
29. ANM- Auxillary Nurse Midwife
30. PHC- Primary Health Centre
31. SC- Sub-Centre

32. NIC-

33. DEO- Data entry operator

34. DQA- Data quality assessment

Case study

Of

National Centre for Disease Control

Organisation

Introduction

"Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India Is controller of National Centre for Disease Control". The Director of NCDC works as administrative head, programme controller and technical head of institute. Since its establishment in 1909, institute is mainly working in field of communicable disease. Its contribution in elimination and eradication of several public health diseases is phenomenal. This institute is mainly known for its epidemiological investigation mainly when many emerging and re-emerging epidemics keeps on bothering the country. NCDC has its head quarters at Delhi and 8 outstation branches.

History

Established in 1909 as Central Malaria Bureau, at kasauli.

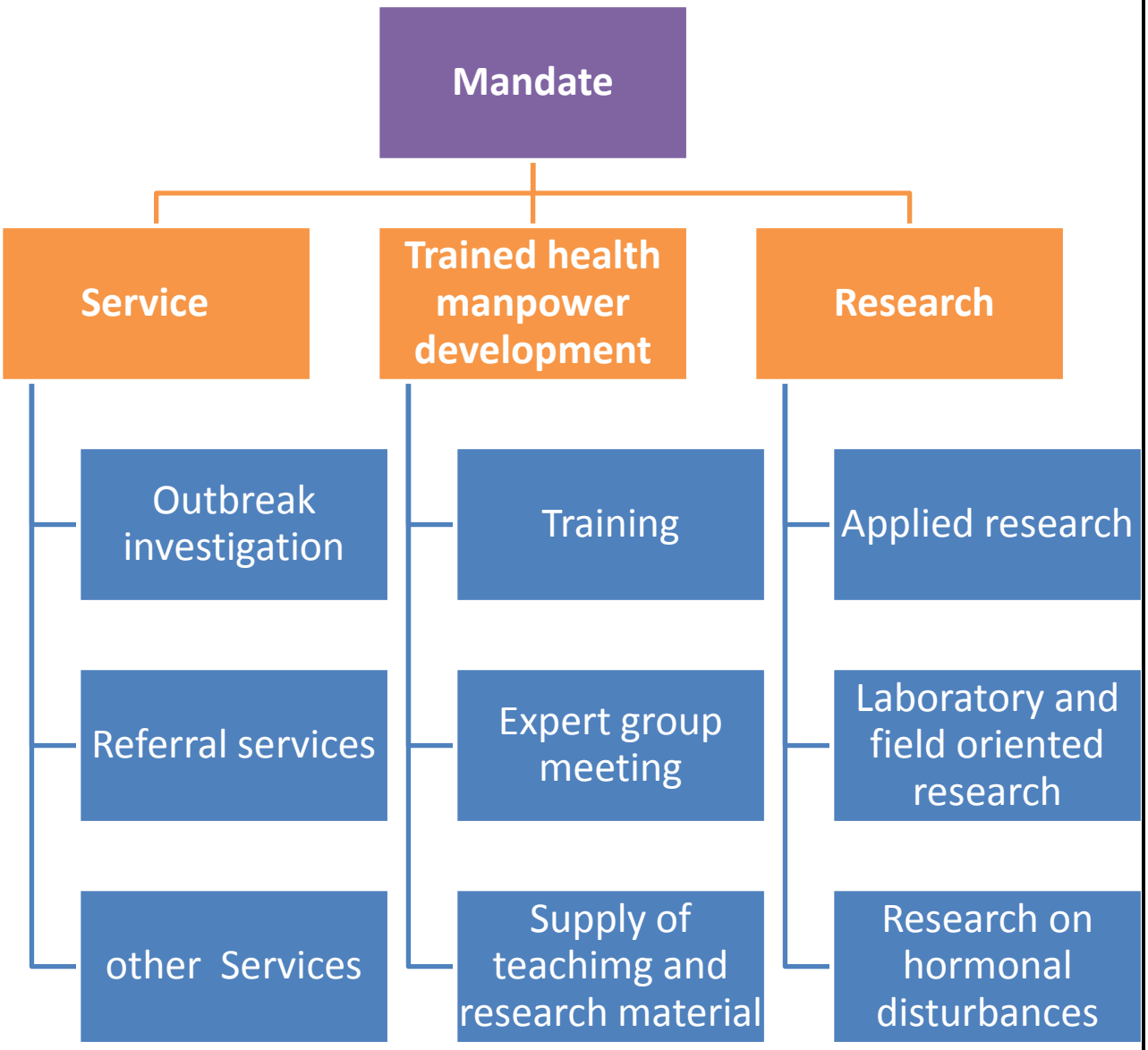
Expanded in 1927 as Malaria Survey of India.

Shifted to Delhi in1938 and was called Malaria Institute of India.

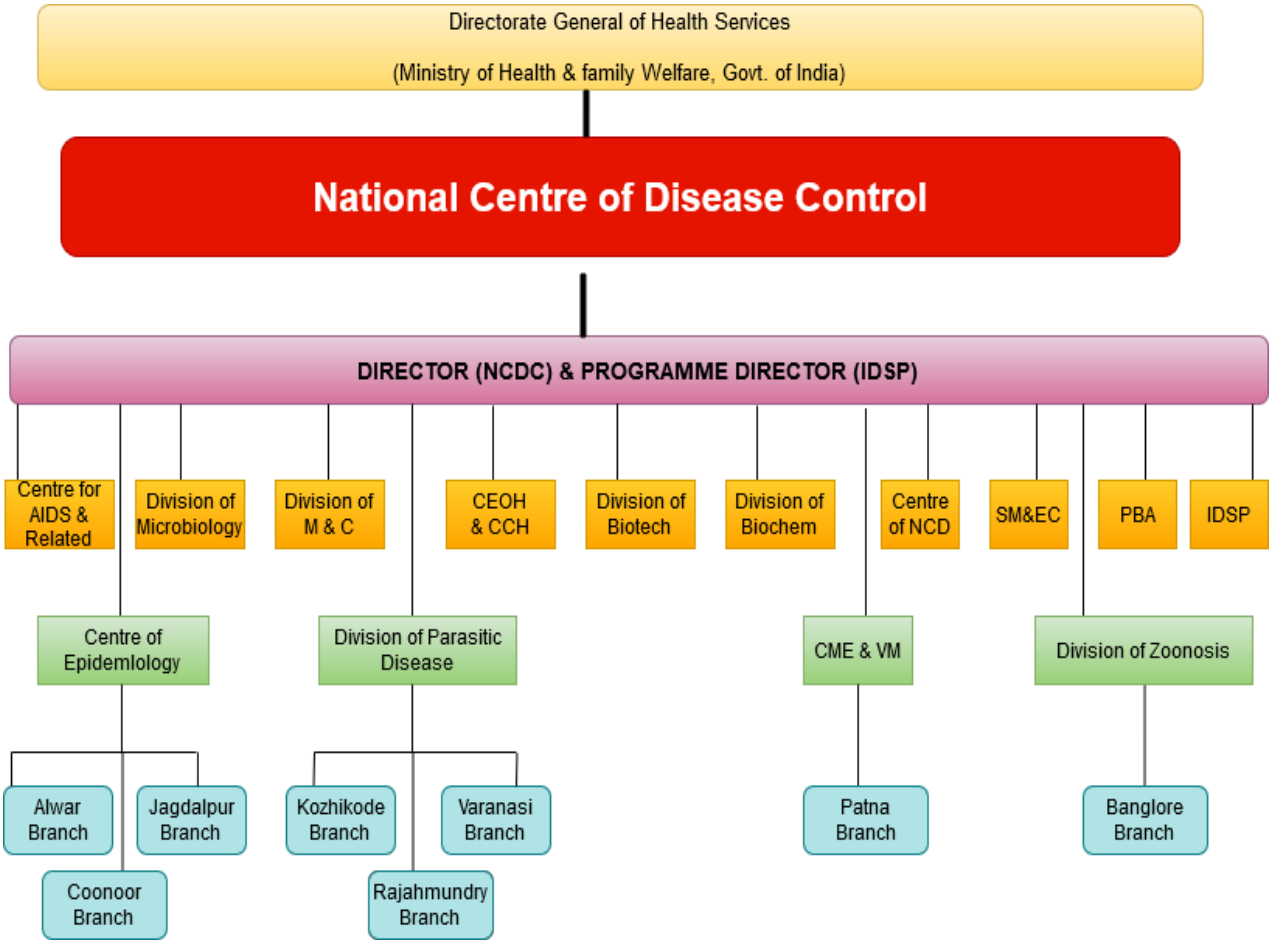
July 30, 1963 renamed as National Institute of Communicable with added responsibilities of communicable disease.

On 2009 it was renamed as National Centre for Disease Control with added responsibilities to work on growing non communicable disease, changing environment etc burden.

Mandates of NCDC



ORGANISATIONAL CHART



Reference: - NCDC Booklet

Services (Functions)

I. Trained Health Manpower Development

- India EIS programme
- MPH(FE) course
- Regional field epidemiology training programme
- For prevention and control of communicable disease training is done regionally.
- Vector borne disease
- Msc , MPH and PhD programme

II. Applied Research

- Done in the field of immunology, mycology, bacteriology, virology parasitological and quality control of diagnostic reagent
- Field based study on various epidemic prone diseases
- Studies on health hazards of pesticides
- Study on transmission of disease by arthropods

III. Specialised services

- Diagnostic services
- Entomological services
- Quality control of insecticides
- Supply of research material
- Outbreak investigation
- Verification on rumours of spread of eradicated disease
- Supply of teaching material

IV. Publications

- CD alert
- NCDC newsletter

Divisions and their roles and responsibility

1. CENTRE OF EPIDEMEIOLOGY

- Organisation and coordination of training courses in epidemiology
- Investigation of outbreak of disease and to recommend its measure of prevention and control
- Do field research on communicable disease
- Assists Director for publication of monthly bulletin and news letter.

2. DIVISION OF MICROBIOLOGY

- Main objective is to provide technical support to nation health programmes
- Laboratory support for national health programmes, IDSP, for diagnosis of respiratory virus infections
- Identification of bacterial and viral pathogens

3. DIVISION OF ZOONOSIS

- Laboratory diagnosis division for diseases of zoonotic origin
- Has 2 national surveillance centre -:
- Plague surveillance centre
- WHO collaborating centre for Rabies epidemiology

4. CENTRE FOR ENTOMOLOGY AND VECTOR MANAGEMENT

- Phase 3 field trial of Duranet LLIN against malaria mosquitoes at 3 ecologically different location
- Ades surveillance in Delhi and Ncr area
- Dengue and JE viral detection in mosquitoes
- Mosquito proof deserted cooler "(NICD cooler) is patented". It is "registered with National Research Development Corporation ".

5. CENTRE FOR AIDS AND RELATED DISEASE

- This is one of the 13 reference laboratory under National AIDS Control organisation (NACO)
- Conducts external quality assessment (EQAS) for HIV serology

6. DIVISION OF BIOCHEMISTRY AND TOXICOLOGY

- Main thrust area are Training need assessment for HR at Ntiona, State and District level public health lab monitoring iodine deficiency disorder and flurosis
- To monitor national public health programme

7. DIVISION FOR PARASITIC DISEASE

- Associated with activities related to neglected tropical diseases like Soil Tr ansmitted Helimenthiasis, Lymphatic Filariasis, Guinea worm disease.

8. DIVISION OF MALARIOLOGY

- Provides technical support for outbreak investigation of disease related to malaria parasite

9. CENTRE FOR ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND CLIMATE CHANGE AND HEALTH

- Create awareness among professional about occupation and health and health consequences of climate change

10. CENTRE FOR NON_COMMUNICABLE DISEASE

- It provides technical support to NPCDCS

11 STATISTICAL MONITORING AND EVALUATON CENTRE

- Professional statistical support is given to various departments of NCDC

Branches

There are 8 branches of NCDC, located in various parts of the country. These branches were originally established to carry out certain specific task, now they represent NCDC in different locations.

1. **Alwar Branch**

   Broad Objectives

   - Unit gives services during training in public health, MPH, Para medical, Malaria and during health emergency.
   - It facilitates in field of public health via trainer and facilitators support to state and district in various NHP

2. **Bangalore Branch**

   Broad objectives

   Coordinate surveillance activities for Plague in endemic states and International Seaports of the country.

   - Laboratory testing is done for Leptospirosis, Rickettsia, Dengue
   - Disease out-breaks (in different regions) are investigated.
   - Provide training to health Professionals.

3. **Coonoor branch**

   Broad Objectives

   - Investigates outbreak of communicable disease
   - maintain colonies of vector mosquitoes
   - Also train public health professionals

4. **Kozhiode, Rajahmudry and Varanasi**
   - These are 3 formerly established Regional Filaria Training and Research centre(RFTRC) functioning at Kozhikode in Kerala, Rajahmudry in Andhra Pradesh and Varanasi in Uttar Pradesh.
   - These centres were established to conduct training for National Filaria Control Unit in different parts of country.
   - It also conducts research in field of Filaria.

5. Jagdalpur Branch

Broad Objectives:

- ✓ Research
- ✓ Training
- ✓ Malaria diagnosis & Water-bacteriology, during outbreak investigation.
- ✓ It detects and collects Mosquitoes for controlling of JE in various blocks of Bastar District.

6. Patna branch

Broad objectives

- ✓ presence, distribution, population dynamics is done as entomological study
- ✓ control of the Kala-azar vector
- ✓ Suggest therapy (drug) and vector control strategy.

7. Establishment of new branches

30 new branches (including 8 branches) in all states and 1 UT of country have been approved in 12^{th} year plan.

COMMUNICATION CHANNEL AND STRATEGY

Communication is great tool or conveying to public however inappropriate communication can cause stress of healthcare system.

Various mechanism of communication here are :-

Interpersonal communication

Interaction with government officials

Interaction with various stakeholders involved at field level

Mass media communication: through various channels

- ✓ Teleconferencing
- ✓ SMS
- ✓ Mass e-mailing

Organizational channels

- ✓ NCDC newsletter
- ✓ CD alert

HUMAN RESOURCE POLICIES

Division of Planning Budget and Administration is backbone of administrative functions of NCDC .Following are branches-

- ✓ "Planning research and coordination section"
- ✓ "Establishment Section"
- ✓ "Accounts and Budget Section"
- ✓ "General Service Section"

Establishment Section undertakes the following responsibility

- ✓ Appointments and promotion of group B (non gazetted), C and D categories.
- ✓ Actions related to retirement or death
- ✓ Pay fixation as per CPC recommendations

Accounts and Budget Section undertake the following responsibility

- ✓ "Overtime allowance"
- ✓ "Festival advances"
- ✓ "Medical bills"
- ✓ "Arrears bills of DA"
- ✓ Leave encashment
- ✓ "Income tax calculation"
- ✓ "Preparation of family pension or pension, gratuity and commutation of retiring officers, staff of NCDC headquarters".

General Service Section is responsible for

- ✓ Cleanliness of hostels, mess.
- ✓ Engagements of security staff etc on rotational basis.

Declaration:- taken from NCDC.gov.in

Annexure

Declaration-

I have read and understood NCDC code of ethics and conduct and agree to abide by its entire proposition both in letter and spirit. I also abide by the administration and Human resource policies of NCDC.

Signature

Name

Date

NCDC role in Communicable and Non communicable Diseases Prevention

Organisation actions related to communicable and

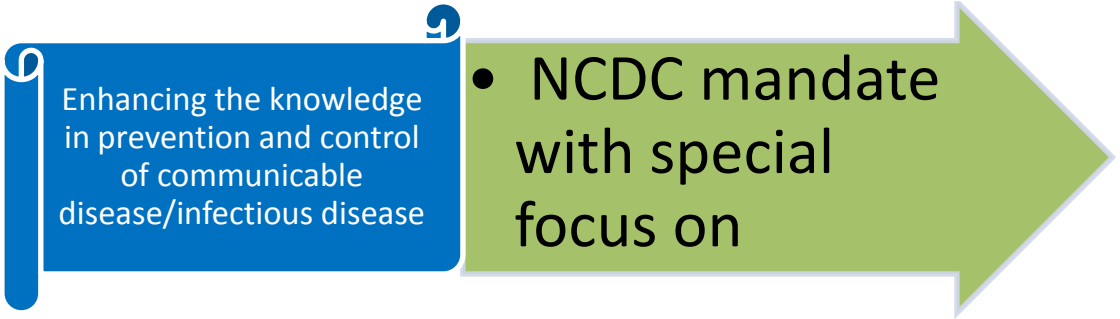
Non-communicable diseases.

NCDC was established to function as

country wide disease surveillance, training

National centre for excellence for control of communicable disease.

applied research with integrated approach.



- Surveillance of epidemic prone communicable diseases
- Epidemic/outbreak investigation and their containment
- Referral diagnostic support service
- Training and manpower development
- Technical advisory
- Applied and operational

Source:- Ncdc.gov.in

Services provided by NCDC

1. Outbreak investigation

- To assist states in investigation of outbreak of epidemic prone disease
- State/District surveillance unit (SSU/DSU) do surveillance of epidemic prone disease to detect outbreak disease
- Investigating rumours in case of eradicated/eliminated disease like smallpox, yaws, polio.

2. Diagnostic services

- Diagnosis of malaria (1 working day)
- Serological testing and confirmation of HIV (walk in client 1day, referral client 7 days)
- Serological testing for Dengue, Japanese Encephalitis, Chikungunya and Syphilis.
- Serological screening of people in contact with Hepatitis B and C carriers.
- Absolute CD4 TLymphocyte count.
- Investigation/secrenning for toxoplasmosis , leshminiasis/Aspergillus and Cryptococcus.
- Molecular diagnostic test based on PCR/RT-PCR gene sequencing of impartant epidemic prone disease.

3. Other services

- Storage and supply of vaccine and other important materials like test kits, reagents etc.
- Quality control of biological i.e. Hepatitis vaccine, test kits for AIDS etc.
- Entomological investigation
- Disaster management
- Testing of insecticide formulas.

Programmes and New Initiatives

National Health Programmes

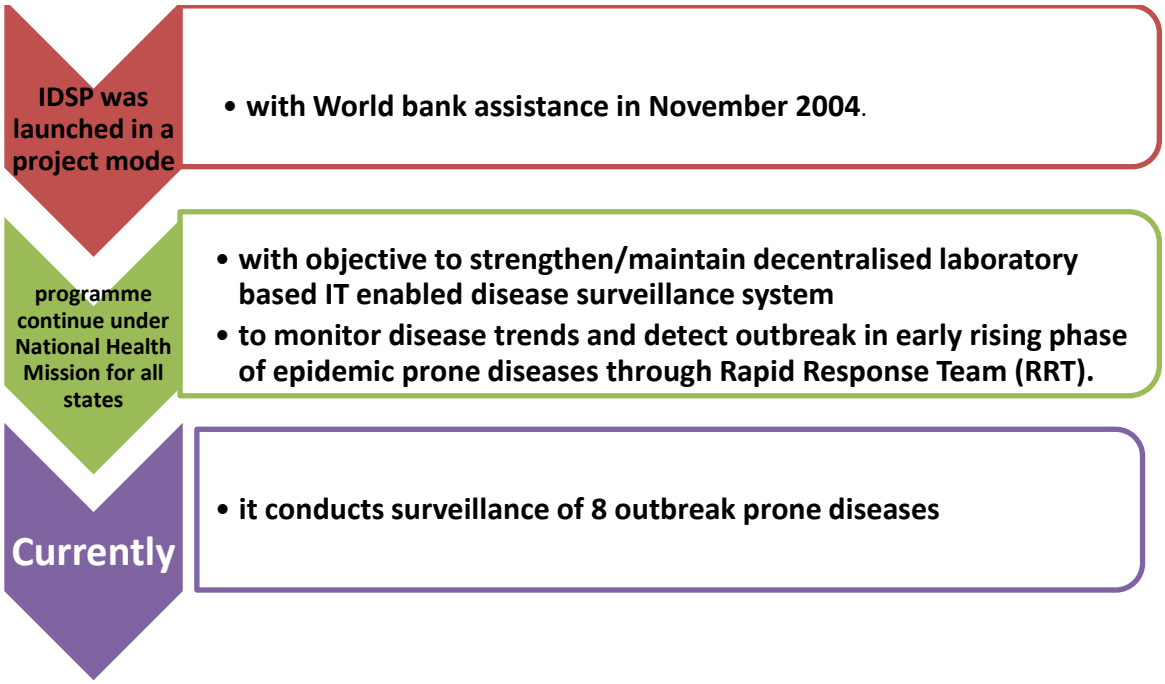
- Integrated disease Surveillance Programme(IDSP)
- Yaws Eradication Programme(YEP)
- Guinea Worm Eradication Programme(GWEP)
- Support to National Filaria Control Programme(NFCP)

New Initiative

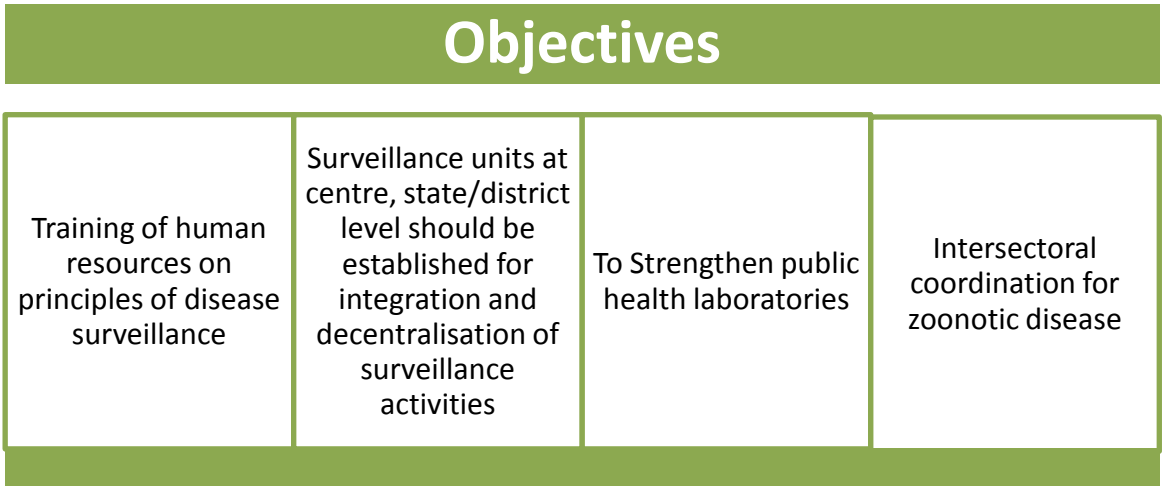
- National Programme on Containment of Antimicrobial Resistance(AMR)
- National Programme of Prevention and Control of Viral Hepatitis in India
- National Rabies Control Programme
- Programme for Prevention and Control of Leptospirosis
- Intersectoral coordination for Prevention and Control of Zoonotic Disease
- Support to National Polio Surveillance
- Global Health Security Agenda(GHSA)

INTEGRATED DISEASE SURVEILLANCE PROGRAMME (IDSP)

INTRODUCTION



Declaration:- from NCDC booklet



Approaches taken under IDSP Programme

SURVEILLANCE UNDER IDSP

- ***Routine (indicator based) data collection***

  Collection of data is done weekly, which is divided in 3 specified reporting formats, namely

  S (suspected cases),

  P (presumptive cases),

  L (laboratory confirmed cases).

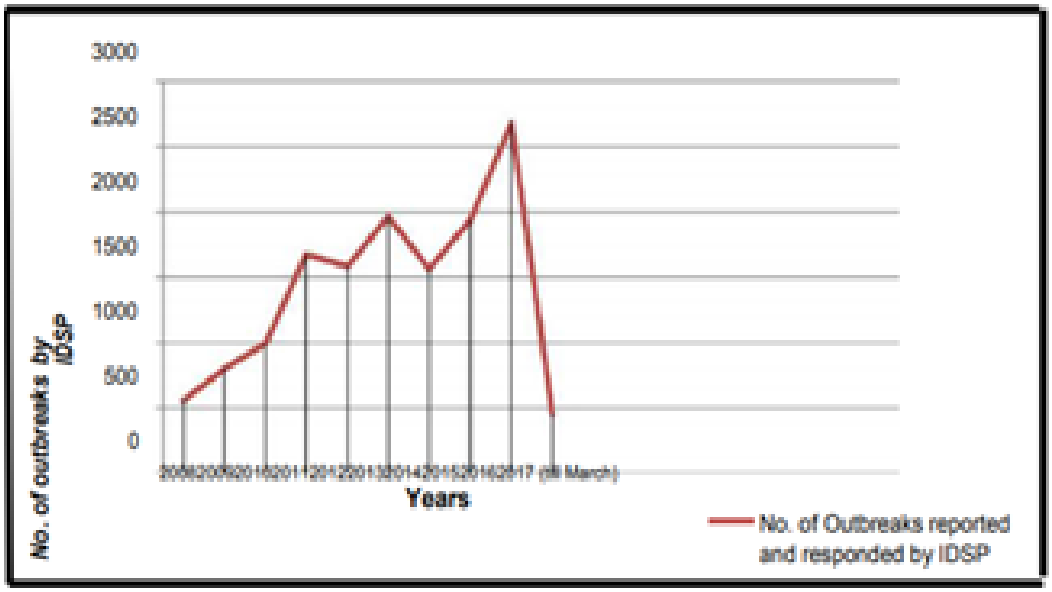
This data gives trends of diseases. Presently 96%district report on email or port

If Increasing trend of disease	investigated by RRT team to diagnose and control	data analysis is done by respective state surveillance team

- ***Outbreaks or event based***

  Outbreaks are also immediately reported to system through Early Warning Sign (EWS) format.

Figure showing year wise trend of Outbreak.



SPECIFIC ACTIONS TAKEN

Data collection through "Strategic Health Operations Centre(SHOC)"

"SHOC" is part of IDSP, developed to" strengthen the outbreak detection and response by utilising state-of-art-information technology".

SHOC was activated to Level1 for activities related to

Ujjain kumbhmela from 22-04-16 to 10-06-16 and also for" collection compilation" and analysis of " H1N1 data on daily basis".

SHOC was activated to level 3 for H1N1 outbreak from 26 feb to 13 apr 2015 and activated to Level1 for monitoring situation of flood in5 states of the country :- Gujrat, Rajasthan, Oddisha, WestBengal and Manipur in August 2015.

SHOC also circulates daliy situational report-

- data collected for death due to heat waves under SHOC
- Also H1N1 data is collected

Data Collection through Media Scanning

Media scanning and verification cell function under IDSP to detect and alert media alerts with respective states/districts for verification.

A total 4232 alerts have been detected till March 17.Majority of

alerts were for Diarrheal, food borne or vector borne disease.

State wise media scanning alert list

Sno.	States / UTs	Number of Media Alerts in 2016-17
1	Andaman and Nicobar Islands	0
2	Andhra Pradesh	17
3	Arunachal Pradesh	0
4	Assam	5
5	Bihar	18
6	Chandigarh	4
7	Chhattisgarh	11
8	Dadra and Nagar Haveli	0
9	Daman and Diu	1
10	Delhi	32
11	Goa	4
12	Gujarat	33
13	Haryana	18
14	Himachal Pradesh	9
15	Jammu & Kashmir	13
16	Jharkhand	14
17	Karnataka	48
18	Kerala	30
19	Lakshadweep	0
20	Madhya Pradesh	40
21	Maharashtra	55
22	Manipur	6
23	Meghalaya	1
24	Mizoram	11
25	Nagaland	3
26	Odisha	60
27	Puducherry	2
28	Punjab	18
29	Rajasthan	32
30	Sikkim	0
31	Tamil Nadu	35
32	Telangana	28
33	Tripura	5
34	Uttar Pradesh	53
35	Uttarakhand	12
36	West Bengal	7
	Total	**625**

Special Surveillance During Ardh Kumbh Mela, Prayagraj, Uttar

Pradesh January-March 2019

Kumbh is religious mass gathering. In 2019 Prayagraj hosted this mela. During this event 150 million peoples visited prayagraj from various part of the country and world.

Such mass gathering requires prior preparednessto address broad range of Public Health issues like Outbreak of any communicable disease ,any manmade or natural disaster which can lead to loss of lives. Thus mass gathering provide an opportunity to strengthen International Health Regulation (IHR) core capacities and public health system. However they can also introduce some challenges which need to be managed.

To address some of these challenges NCDC has setup special surveillance system with UP state health department.

Kumbh mela event involves bathing in river and mixing of millions of people in a confined space. This increases chances for spread of communicable disease and accidents.

Key features of this special surveillance

Identified 65 reporting unit for public facilities

4 unit for private facilities.

Risk Assesment

Conclusion

Public health surveillance system as described above is appropriate for planning, monitoring and intervention in such mass gatherings.

Use of technology for collection, assimilation, storage and transfer of data can increase the utility of surveillance in real time.

References

- https://ncdc.gov.in/

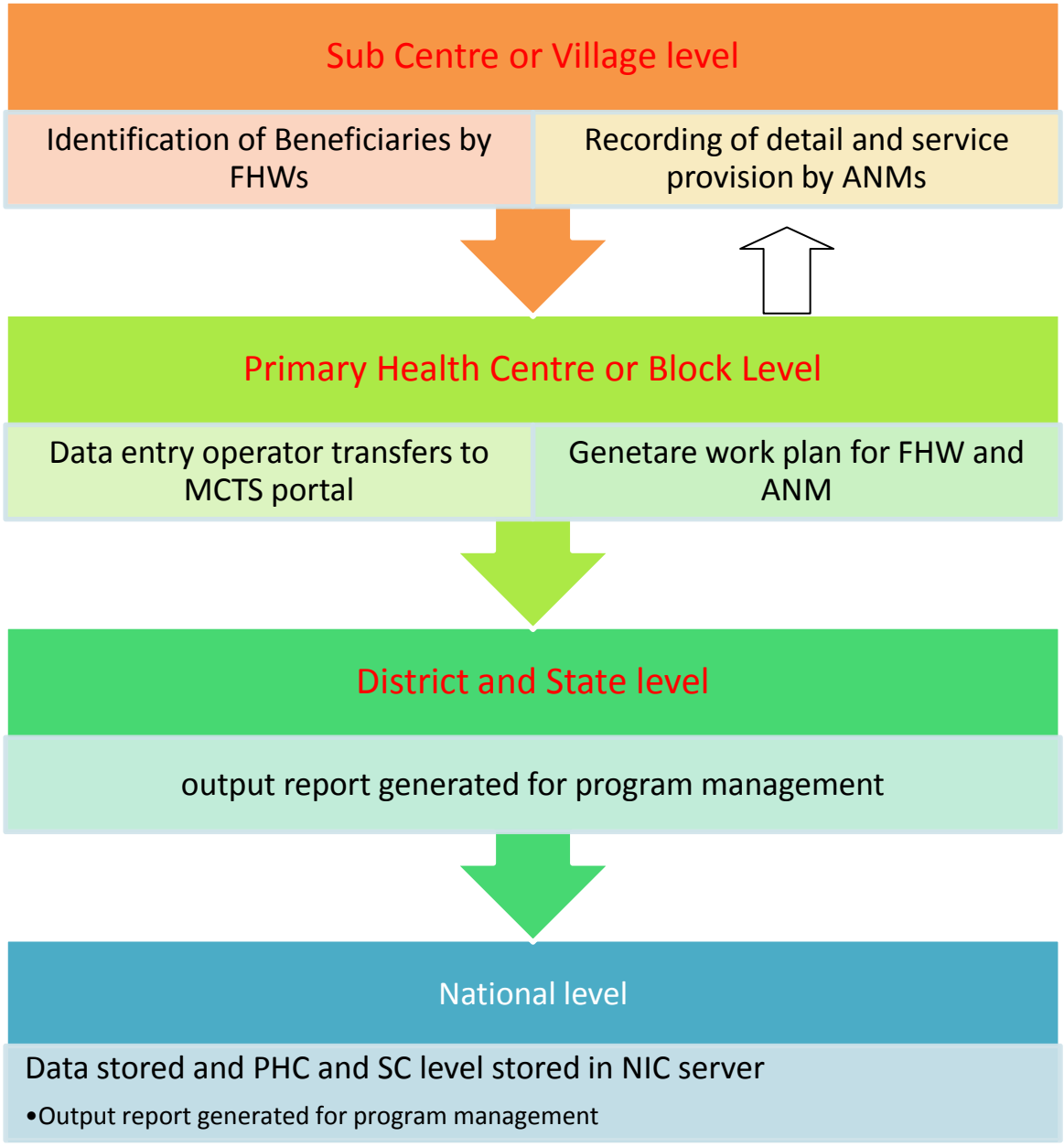
Comparison Study

On

Maternal and Child Health Tracker Implementation in 5 different states of INDIA

INTRODUCTION-

"Mother and Child Tracking System" is a initiative started by Government to strengthen MCH via information technology. MCTS has been created to gather information of all pregnant women and children (upto 5 yrs of age). Below is the chart which shows workflow or process of MCTS.



We can see that Success of MCTS data depends on process at village level, FHWs, ANMs and DEO work quality and understanding.

OBJECTIVE-

To review and compare recent studies on assessment and "implementation of Mother and Child Tracker System (MCTS)" in different states of INDIA.

METHODOLOGY-

- *Research Design*- Desk Review Study.
- *Search Strategy*- Reviewed Google Scholar, Pub med, Ncbi.nim.nhm.gov
- *Selection Criteria*- full articles on MCTS study in India, done in different states, time period –included 2015 and 2016 articles
- *Exclusion Criteria*- articles with no access to full text, out of India, articles not matching the set criteria.
- *Keywords*- MCTS, India, interpretation or assessment.

RESULT-

Articles on Mother and Child Tracking system assessment in 5 different states of India have been reviewed. These studies include different methodology and different perspective to assess MCTS.

Parameters considered were the location of study, objectives, methodology and time frame and outcome (Result).

Study name	**Author**	**Objective**	**Methodology**	**Result**
"An in-depth assessment of India's mother and child tracking system (MCTS) in Rajasthan and Uttar Pradesh."	Rajeev Gera et al	Carry out DQA on data found in MCTS portal using. Use assessment survey to identify process, practices, budget, infrastructure and hr related to MCTS implementation. To Utilise result from above to identify implementation challenges.	"DQA and Assessment survey"	Data quality assessment survey shows there is Weakness in data completeness. Guidelines governing data,and proper process seems missing and monitoring and supporting framework also missing. FHW were overloaded, lack of training, shortage of consumables, internet and electricity problem (U.P)

"Is Mother and Child tracking system (MCTS) on the right track? An experience from Northern India"	Nagarjan P. Tripathy JP. Goel S.	To understand opportunities and challenges in operationalisation of MCTS strategy in a district in Haryana and understand stakeholders perspective.	"Performance of routine information system framework (PRISM) was used. Cross sectional study"	Training is not upto the point. Overburden on data entry operator and ANM Internet and electricity problem (major limitation)
"A study on implementation of Mother and Child tracking system in Chilakaluripeta Cluster of Guntur District, Andhra Pradesh"	M Shiva Durga Prasad Nayak et al	To study the status regarding availability of infrastructure and skilled personnel related to MCTS To identify technical error in MCTS website To study knowledge and practices of ANM regarding MCTS.	"Cross sectional observational study"	Connectivity and computer support was 100% but lack of data entry operator, mere presence of infrastructure without skilled manpower was hindering.
"Prevalence in utilization of text message services under Mother and child tracking system of India: A Cross sectional study from Pune District, Maharastra India"	Ankita Sharma et al	To determine the prevalence of use of SMS by beneficiaries of MCTS from Pune District	"Cross sectional study"	66% has mobiles with 99% coverage but only 17.6% were aware of sms service and only 14% of them received messages from MCTS. When message was send in their local language 44% of them was aware of sms service and 25 % confirmed. Thus m-Health cannot be used as standalone and initial communication and familiarization is needed .
"Computer Tablet based Health technology for strengthening Mother and Child Tracking in Bihar"	Preeti Negandhi et al	To report process of implementation of Tablet based MCTS in Bihar	"Qualitative study design"	Tablet based entry by ANMs can offer tremendous strength and opportunity to overcome overburden, wrong entry by data entry personnel.

Conclusion-

Today in era of technology good Health information system is must. MCTS is one such initiative to track health of pregnant and child health to ensure proper services. All the 5 studies support need of proper process and guidelines for good service. Health workers like FHWs, ANMs and DEO are overburdened with work. There is lack of training, monitoring and supporting framework and also short of consumables.

Studies in Rajasthan, U.P. and Haryana say there is lack of electricity and internet facility to run MCTS. Other 2 study done in Guntur and Pune say coverage is good but familiarization and unskilled workers was hindering there.

Discussion-

MCTS is good initiative Launched by Government of India. All 4 pillars of e-governance i.e. connectivity, content, capacity and capital is important. All studies suggest missing of one or more pillar. Mere presence of good infrastructure is nothing without skilled workers. There is no doubt that MCTS is very helpful and its designing is also proper with minor issues which can be handled. But problem lies in our inability to properly implement and run the system due to lack of human resources, no guidance , overburden of work for our field worker and data entry operator. As we know in this era everyone has mobile phones and good internet facility, available in many villages. I am sure this will expand to remaining areas as well thus expanding coverage by MCTS like schemes.

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Primary Study on-

“Assessing awareness about Cervical Cancer vaccine and its screening among females of 18-55 yrs of age”.

INTRODUCTION-

"Cervical cancer" occurs when abnormal cells grow in uncontrolled manner in the lining of cervix. Cervix is lower part of uterus. It connects body of uterus to vagina (birth canal).

"Cervical cancer" is second most common cancer among Indian women, mostly common in women of 15-44 yrs of age. More women in India die from cervical cancer than any other country. 96,922 new cases of cervical cancer are detected in India every year. 60,078 females die of cervical cancer every year in India.

"Human Papilloma virus (HPV) is known as causative agent of cervical cancer". It is responsible for majority of the cases. Indian studies show that 82.7% of the invasive cervical cancer showed presence of HPVs 16 and 18. According to CDC, it is highly preventable because of the availability of vaccine and screening tests (Pap smear). Pap smear screening is highly cost effective and simple method to detect cervical cancer. So if cervical cancer is detected early and treated in early stage it can be cured completely. Thus his study aims to see awareness about cervical cancer vaccine and Pap smear screening among females of 18-55 yrs of age.

OBJECTIVE-

- To assess awareness level of Indian women about cervical cancer screening and vaccination.
- To assess acceptance behaviour of vaccine and screening process for prevention of cervical cancer.

METHODOLOGY-

This is cross sectional study conducted among Indian females of 18-55 yrs of age during May 2020. It's a quantitative study conducted among 152 systemically selected females from total 180 contacts. Written and informed consent was taken from all participants after they were explained about the study. The questionnaire having 15 question and 4sections was designed based on study objectives. Sections were Demographic section which included age, gender, educational status, marital and children status. Knowledge about cervical cancer has following questions have you heard of cervical cancer and its risk factor, from where you have heard and have you heard of HPV vaccine and have you

taken vaccine and how many doses. Knowledge about cervical cancer screening includes have you heard of Pap smear test, If yes then have you got your test done, if no why? Most of the questions were closed ended with appropriate multiple choices.

The data was entered in Microsoft Excel and statistical analysis were done using SPSS.

RESULTS-

Total number of participants were 152 excluding 12 males and 2 who disagree to participate. Table 1 shows Age wise distribution of 152 participants. The mean age of respondents were 28.6 years and age ranged from 18 to 52 year. About 39.47 percent were married and rest 60.52 percent was single. The educational level of the respondents shows 36.84 percent graduate, 44.07 percent were postgraduate and 15.7 percent were doctors.

Table 1- Age wise distribution of study participant (n= 152)

Age (years)	**N (%)**
18-20	8 (5.2)
21-30	100 (65.7)
31-40	36 (23.6)
41-50	6 (3.9)
51-60	2 (1.3)

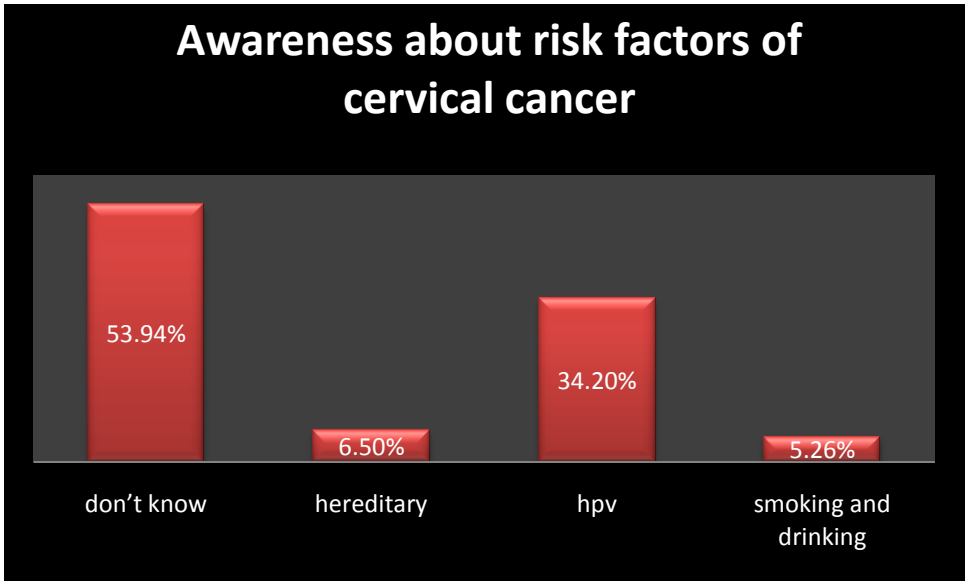
Almost 91% of the respondent said they have heard of cervical cancer (table 2). And from those respondents who know about it, 45% have heard from social media, TV etc and 28% said they heard from school/collage.

Table 2-Answer to question" Have you heard of Cervical cancer"

Heard of Cervical Cancer	No (%)
Yes	139 (91.44)
No	13 (8.5)

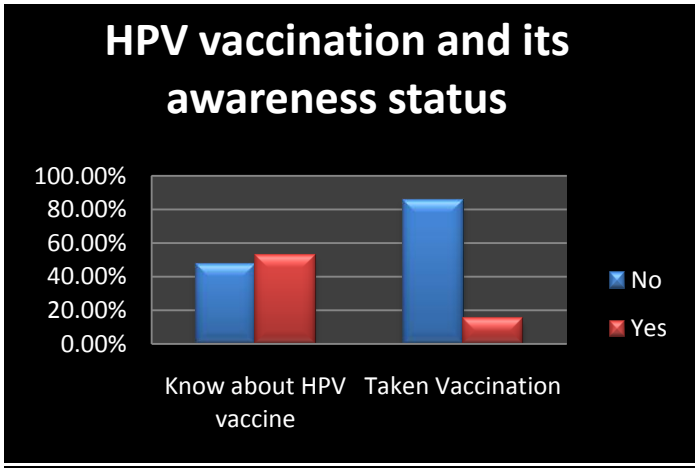
When asked about risk factor 50% said they don't know and 34% said recognize HPV as causative factor (Figure-1) i.e. almost 65% (majority) are unfamiliar that infection with HumanPapillomaVirus is risk factor for cervical cancer.

Figure-1 Awareness of risk factor among respondent (n=152)



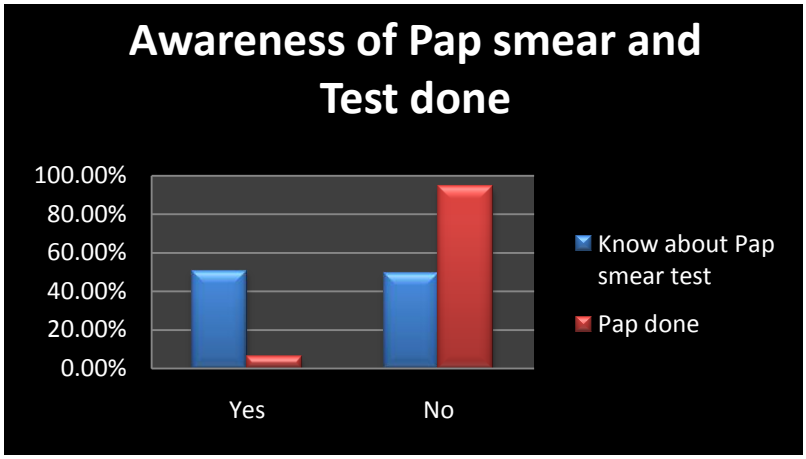
53%of total respondents said they know about HPV vaccine but only 13% of them have taken vaccination. Thus among those who have heard about vaccination 71% were unvaccinated. (Figure 2)

Figure 2- Relationship of HPV vaccination and its awareness.(n=152)



50.65% of total respondent said they know about Pap smear (77/152). Out of these only 10% got Pap smear done (8/77). And of these 10% who know about Pap and got tested 75% were married female (6/8).

Figure 3- Showing relationship between awareness of Pap and Pap done (n=152)



Total number of married women was 39.4% (60/152) out of these only 11% have done Pap smear. Whereas out of 60.5% (90/152) of single women only 8% have done Pap smear. (Table 3)

Most of the respondent said that they didn't know to get tested regularly with Pap smear (52/152) 34.2% also (44/152) 28% said they will get Pap done if Doctor advise them. And 23% (35/152) felt they were healthy so don't require Pap smear.

Table 3 Showing relationship of awareness about Pap smear and Pap done with marital status.

Respondent no.	**Know about pap smear**	**Know and done pap smear**
Total 152	77(50.6%	8 (10.3%)
Single (92/152)	23 (23/92=25%)	2 (2/23=8.6%)
Married(60/152)	54 (54/60=90%)	6 (6/54= 11.1%)

From (Figure 4) showing Age wise distribution of people who are aware of CC vaccine we can see that awareness is increasing with age. As we know cervical cancer vaccine is most effective when taken at 9-13 years of age or before sexual activity starts thus we usually say till 26 yrs. Also as awareness increased from 25%to 56% with age but still getting vaccinated is very less (5% or 21-30 yrs).

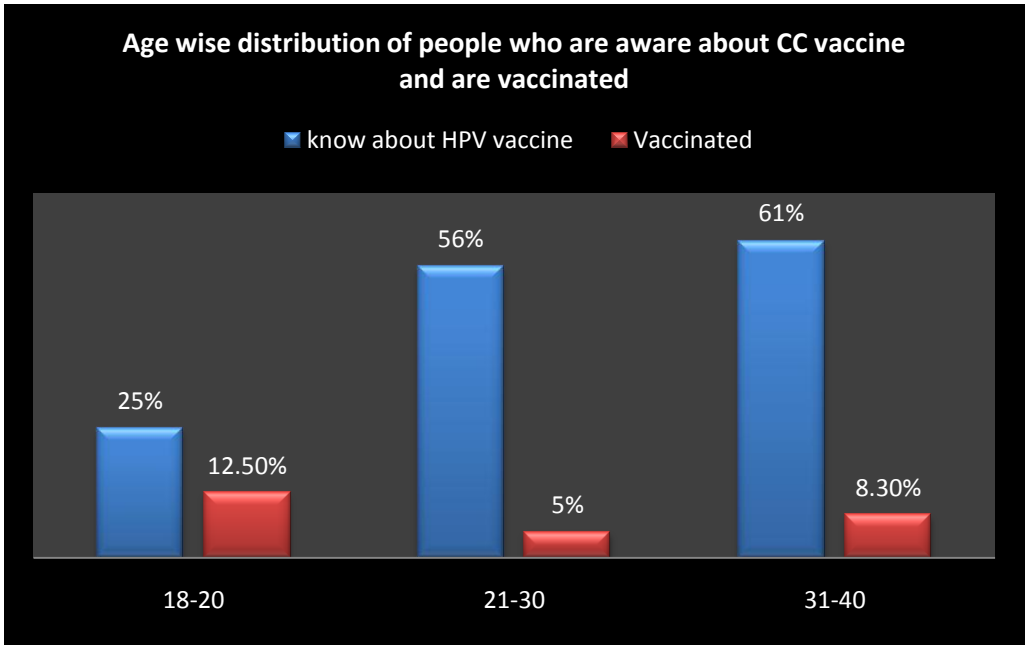


Table -4 Correlations

		Age groups (31-40yrs)	Know about HPV vaccine	Vaccinated
Age groups(31-40yrs)	"Pearson Correlation	1	.443**	.069
	Sig. (2-tailed)"		.007	.690
	N	36	36	36

Know about HPV vaccine	"Pearson Correlation	.443**	1	.241
	Sig. (2-tailed)"	.007		.158
	N	36	36	36
Vaccinated	"Pearson Correlation	.069	.241	1
	Sig. (2-tailed)"	.690	.158	
	N	36	36	36

"**. Correlation is significant at the 0.01 level (2-tailed)".

Age wise distribution of awareness of Pap smear (shown in Figure -5) is also increasing with age with very less effect on getting Pap done. Age and awareness of Pap smear has significant correlation as shown in Table-5

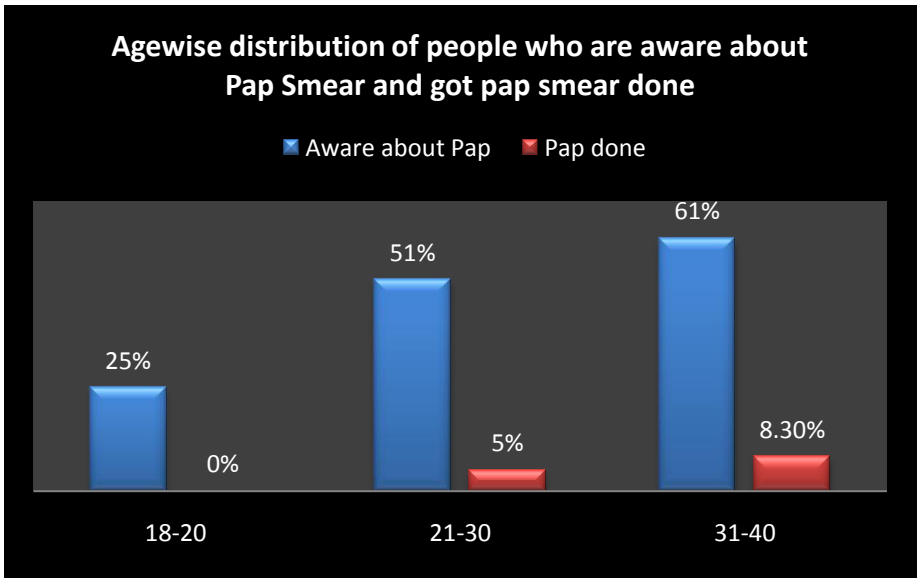


Table 5 Correlations

		Age groups(31-40 yrs)	Know about Pap smear	Pap done
Age groups (31-40 yrs)	Pearson Correlation	1	.355*	.637**
	Sig. (2-tailed)		.034	.000
	N	36	36	36
Know about Pap smear	Pearson Correlation	.355*	1	.241
	Sig. (2-tailed)	.034		.158
	N	36	36	36
Pap done	Pearson Correlation	.637**	.241	1
	Sig. (2-tailed)	.000	.158	
	N	36	36	36

"*. Correlation is significant at the 0.05 level (2-tailed)".

"**. Correlation is significant at the 0.01 level (2-tailed)".

Lastly when asked about why haven't you got Pap smear done majority said they didn't know.

Reasons why you haven't got Pap smear done	N
Afraid	3
didn't know	52
Dr did not advise me	18
I feel I m healthy	35
I will get tested if doctor advise me	44

Discussion-

"Cervical cancer is caused by Human PapillomaVirus infection" and is one of the most common causes of death in Indian females. Various studies suggests that females at 55-65 age are at highest risk of cervical cancer, however many female in their 30's have also fallen prey. WHO recommends immunization of girls between 9-13 years of age as vaccine is most immunogenic at this age. Also only 2 doses at interval of 6-12 months is required for girls under 15years of age. Girls or females over 15 years of age and who are immunocompromised require 3 doses.

Now vaccine has been licensed to be given till 45 years of age, but it is mostly not recommended because vaccination after 26 years of age is an expensive decision as immune reaction to vaccine is less. Several studies show that vaccine is most effective till 26 years of age because of good immune reaction. Also there is no point in vaccination of older women, if they are sexually active as they are already exposed to HPV. Two vaccines currently available in India are Gardasil (Rs 3000/dose) and Cervarix (Rs 2190/dose). Sadly, cervical cancer vaccination is a costly affair as most of the state government doesn't provide this and you have to go to private clinics or hospital.

The Limitation of the study is that it is conducted during lockdown. Convenient sampling method was used. Sample size is small. Not include illiterate, low socioeconomic background population to generalise the results.

Conclusion-

In conclusion study showed that awareness of HPV vaccine and screening is still very low among young female (till 26 yrs). Further study also shows that although awareness increases with age (30-40 yrs being most aware) but the willingness to be vaccinated and screened is much low. Cervical cancer prevention efforts should focus on increasing awareness about HPV vaccine and screening process. Future strategy should be to increase awareness via IEC in younger females. Also incorporate it in primary classes to target young population.

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