

CDAlert

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INTEGRATED DISEASE SURVEILLANCE PROJECT

INTRODUCTION

Practice of Public Health has been dynamic in India and has witnessed many hurdles in its attempt to affect lives of the people of this country. Policy makers and administrators frequently announce their concerns and desire to improve health status and quality of life of the people. Yet, there has not been perceivable improvement in improving health services particularly in rural and urban underprivileged groups. Besides inadequate financial resources for the health sector, utilization of these limited resources in an effective and efficient manner has also been responsible for inadequate health services.

Since independence, major public health problems like Malaria, Tuberculosis, Leprosy, high maternal and child mortality and lately HIV have been addressed by launching vertical health programmes. Strategy to have dedicated personnel and delivery systems to implement these programmes was perhaps necessary when magnitude of these problems was huge. However, major success in eradicating/controlling small pox and plague and substantial success in controlling other diseases, there is need to identify areas where convergence and integration would not only save resources but also perhaps be more effective in long run.

It is in this context that Government of India has decided a major paradigm shift in Health Sector in the country. National Rural Health Mission is a leap forward in establishing effective integration and convergence of health services. Similarly the decision to integrate disease surveillance activities is also an

attempt to establish a dedicated but integrated highway of information relating to disease occurrence and associated parameters required for prevention and containment at the community level.

CURRENT SCENARIO OF DISEASE SURVEILLANCE

All outbreaks cannot be predicted or prevented. However, precautionary measures can be taken within the existing health infrastructure and service delivery to reduce risks of outbreaks and to minimize the scale of the outbreak if it occurs. The effectiveness with which national programs are implemented and monitored, the alertness for identification of early warning signals and the capacity for initiating recommended specific interventions in a timely manner are important to achieve the above objectives.

The course of an epidemic is dependent on how early the outbreak is identified and how effectively specific control measures are applied. The epidemiological impact of the outbreak control measures can be expected to be significant only if these measures are applied in time. Scarce resources are often wasted in undertaking such measures after the outbreak has already peaked and the outcome of such measures in limiting the spread of the outbreak, and in reducing the number of cases and deaths, is negligible.

The frequency of the occurrence of epidemics is an indication of the inadequacy of the surveillance system and preparedness to identify and control outbreaks in a timely manner.

Following are main reasons of limited success in disease surveillance in the country:

- Number of parallel systems under various programmes
- Absence of surveillance for non-communicable diseases.
- Limited involvement of medical colleges and private health sector in reporting system
- Inadequate laboratory network for early diagnosis and epidemic investigation
- Surveillance is limited to routine data gathering with sporadic response systems.
- Lack of use of information technology for rapid data collection, analysis and transmission to predict impending outbreaks.

Keeping these limitations in mind, Government of India has launched Integrated Disease Surveillance Project in November 2004 to cover the entire country in a phased manner.

INTEGRATED DISEASE SURVEILLANCE PROJECT (IDSP)

Integrated Disease Surveillance Project (IDSP) is a decentralized, State based Surveillance Program in the country. It is intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It is also expected to provide essential data to monitor progress of on-going disease control programme and help allocate health resources more efficiently.

The IDSP proposes a comprehensive strategy for improving disease surveillance and response through an integrated approach with rational use of resources for disease control and prevention. Data collected under IDSP would also provide a rational basis for decision-making and implementing public health interventions. Specific objectives of the IDSP are:

- To establish a decentralized district-based system of surveillance for communicable and non-communicable diseases so that timely and effective public health actions can be initiated in response to health challenges in the urban and rural areas

- To integrate existing surveillance activities (to the extent possible without having a negative impact on their activities) so as to avoid duplication and facilitate sharing of information across all disease control programmes and other stake holders, so that valid data are available for decision making at district, state and national levels.

Features of integrated disease surveillance are as follows:

- The district level is the focus for integrating surveillance functions.
- All surveillance activities are coordinated and streamlined. Rather than using scarce resources to maintain vertical activities, resources are combined to collect information from a single focal point at each level.
- Several activities are combined into one integral activity to take advantage of similar surveillance functions, skills, resources and target populations.
- The IDSP integrates both public and private sector by involving the private practitioners, private hospitals, private labs, NGOs, etc and by active community participation.
- The IDSP integrates communicable and non-communicable diseases. Common to both of them are their purpose in describing the health problem, monitoring trends, estimating the health burden and evaluating programmes for prevention and control.
- Integration of both rural and urban health systems as rapid urbanization has resulted in the health services not keeping pace with the growing needs of the urban populace. The gaps in receiving health information from the urban areas needs to be bridged urgently.
- Integration with the medical colleges (both private and public) would also qualitatively improve the disease surveillance especially through better coverage.

TYPES OF SURVEILLANCE

Following three parallel systems of surveillance will be established:-

- (a) **Syndromic** – Diagnosis made on the basis of clinical pattern by paramedical personnel and members of the community.

DISEASES UNDER SURVEILLANCE

Core Diseases	
Regular Surveillance:	
Vector Borne Disease	1. Malaria
Water Borne Disease	2. Acute Diarrhoeal Disease (Cholera)
	3. Typhoid
Respiratory Diseases	4. Tuberculosis
Vaccine Preventable Diseases	5. Measles
Diseases under eradication	6. Polio
Other Conditions	7. Road Traffic Accidents
Other International commitments:	8. Plague
Unusual clinical syndromes (Causing death / hospitalization)	9. Meningoencephalitis/ Respiratory Distress Hemorrhagic fevers, other undiagnosed conditions
Sentinel Surveillance:	
Sexually transmitted diseases/Blood borne	10. HIV/HBV, HCV Other Conditions
	11. Water Quality
	12. Outdoor Air Quality (Large Urban centers)
Regular periodic surveys:	
NCD Risk Factors	13. Anthropometry, Physical Activity, Blood Pressure, Tobacco, Diet etc
State specific diseases:	
Each State can include up to 5 diseases prevalent in the State.	

(b) Presumptive - Diagnosis made on typical history and clinical examination by Medical Officers

(c) Confirmed - Clinical diagnosis confirmed by an appropriate laboratory test.

PROJECT PHASING

The Project would cover the entire country in a phased manner as depicted below:

Phase I (commencing from FY 2004-05) Andhra Pradesh, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Uttaranchal, Tamil Nadu, Mizoram & Kerala

Phase II (commencing from FY 2005-06) Chhatisgarh, Goa, Gujarat, Haryana, Rajasthan, West Bengal, Manipur, Meghalaya, Orissa, Tripura, Chandigarh, Pondicherry, Delhi & Nagaland

Phase III (commencing from FY 2006-07) Uttar Pradesh, Bihar, Jammu & Kashmir, Jharkhand, Punjab, Arunachal Pradesh, Assam, Sikkim, A & N Nicobar, D & N Haveli, Daman & Diu, & Lakshdweep.

ORGANIZATIONAL STRUCTURE

The Project is implemented by District Surveillance Units at the District level and State Surveillance Unit at the State level. A Central Surveillance Unit has been set up at National Institute of Communicable Diseases, 22 Sham Nath Marg, Delhi.

COMPONENTS & ACTIVITIES

Four major components of the project are as follows :-

- Integrating and decentralizing surveillance activities
- Strengthening Public Health Laboratories
- Using information technology optimally
- Enhancing human resource development

PROJECT ACTIVITIES

1. Training

Training of various personnel in Disease Surveillance is an important activity of the project. Various training programmes under the project are summarized below.

At the Central Level, training of State/ District Surveillance Teams would be undertaken at

designated institutions. A training module to be used in the training of District Surveillance Teams has been prepared for this purpose.

Trainees	Venue	Days
HWs and Health Asstt., Aganwari Workers, NGO Volunteers, Community based staff, volunteers	CHC	Two
MOs, Sentinel Private Practitioners, MOs of Sentinel Hospitals	Medical Colleges	Three
Training for Lab. Assistance at CHC/PHC	District H.Q.	Three
Data Entry Operators	District H.Q.	Two
Data Managers of DSU/ SSU	Regional/ State	Three
Laboratory Technicians for DPH and for State Laboratories	Medical Colleges	Six
District and State Teams (to be trained as Trainers for other courses)	National Institutes	Six

2. Development of Standard Operations Manual and Reporting Formats

Operations Manual for District surveillance units, Medical officers and Health workers have been developed and disseminated to the States. Standard formats have also been developed for reporting suspect, probable and confirmed cases of the diseases under surveillance. Manual on Laboratory Techniques for various levels have been developed in collaboration with Micro-biology division of National Institute of Communicable Diseases and would be used in the Project.

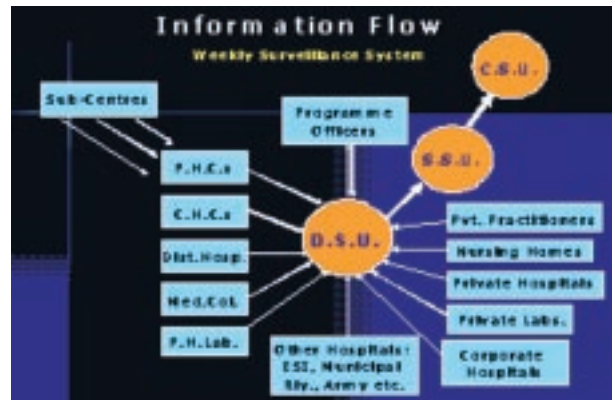
3. Procurement of Goods & Services

Following items will be procured centrally in given as commodity assistance to the states:

- Development of Laboratories through Renovation and Supply of equipments, consumables including rapid kits
- Office Equipment: Fax, Xerox Machine, OHP, LCD Projectors etc.
- Computer Hardware (Servers, PCs, Printers and Accessories) & System Software

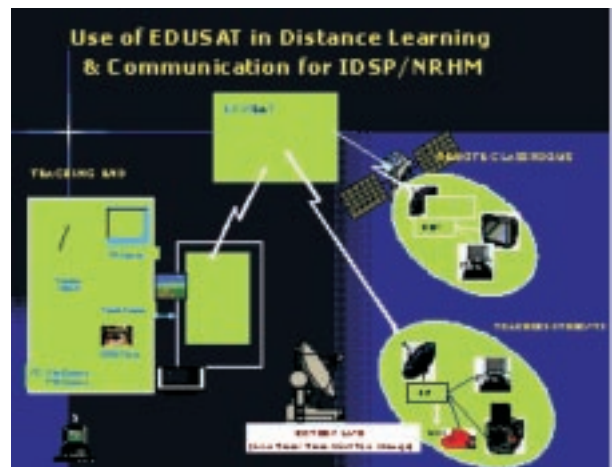
4. Development of Software for Disease Surveillance

A software will be developed for data entry, compilation, analysis and GIS to facilitate Disease Surveillance. Nation-wide web connectivity would be provided under the project. A typical District Surveillance Network is depicted below:



5. Satellite Communication

Bandwidth on EDUSAT launched by ISRO is being utilized to set up communication and information network throughout the country. Central studio at National Institute of Communicable Diseases with a sub-hub in Nirman Bhavan and 800 Satellite Interactive



Terminals (SITs) located throughout the country would be set up connecting all the State and Districts Units, medical Colleges and premier state and national institutions. This network will be utilized for distance training programmes, teleconferencing and data transmission. Funds have been sanctioned from IDSP Budget for 2005-06 to ISRO to cover 400 SITs by June 06. Remaining 400 SITs would be covered during 2006-07 and covered by December 2006.

6. Participation of Private Sector in IDSP

Strategies for involvement of private sector have been worked out in consultation with Indian Medical Association and Indian Academic of Pediatrics. Sentinel Private Practitioners, Private Hospitals and Laboratories and NGOs would be participating in Disease Surveillance Activities.

Criteria for Selection of Sentinel Private Practitioners & Hospitals

The Private Health Sector consists of large private hospitals, nursing homes, individual practitioners, private laboratories etc. While ideally all such units should be involved in providing information on target diseases under surveillance, following parameters may be used to identify suitable sentinel sites:

- Selection by volume of target diseases attending units;
- Geographical distribution in the district;
- Credibility of the unit in the society; and
- Willingness of the unit to participate in providing information.

The DSU will select sentinel private units in consultation with local IMA/IAP branches.

Project Areas for Participation

Integrated Disease Surveillance Project envisages participation of Private Sector in number of Project Components as indicated below:

- Weekly Surveillance of Communicable Diseases: This would be regular surveillance of target diseases (core diseases+ state specific diseases). Linkages would be established between DSU and selected sentinel sites.
- Members of District Outbreak Investigation Team (DOIT): The DSU may identify panel of Microbiologist/Pathologist, Clinician and Public Health Specialists/Epidemiologists in all sectors to be members of DOIT and seek their cooperation in the event of outbreaks. In some districts, there may be inadequacy of such specialists.

- Surveillance of NCD Risk Factors: Periodic Surveys will be organized by the Central Surveillance Unit for NCD risk factors in randomly selected districts. These surveys would be undertaken by eligible institutions from Government as well as NGOs/Private institutions.
- Training: Training of various categories of personnel would be undertaken by eligible organizations in Government and Non-Government sectors.
- Other Areas: Eligible Non-Government organizations would be able to participate in other areas of the project like External Quality Assurance Surveys (EQAS) and other evaluation studies during the course of the Project. "Expression of Interest" is invited through open advertisement for such studies. Private organizations can also be involved for various consultancy services. Some States are opting to outsource some of the activities of the Project.

7. Participation of Medical Colleges in IDSP

Medical Colleges would be involved in Disease Surveillance Training Programmes, Internal Quality Assurance and Surveys. A scheme has been prepared for this purpose.

Project Areas for Participation

Integrated Disease Surveillance Project envisages participation of Medical Colleges in number of Project Components as indicated below:

- Weekly Surveillance of Communicable Diseases: This would be regular surveillance of target diseases (core diseases+ state specific diseases). A client PC would be provided to establish linkage between DSU and Medical College. Laboratory services in the Medical Colleges would also be utilized during routine surveillance and outbreak investigations.
- State/District Outbreak Investigation Team (DOIT): The DSU would identify panel of Microbiologist/ Pathologist, Clinicians and

Public Health Specialists /Epidemiologists to be members of DOIT and seek their cooperation in the event of outbreaks. Key faculty from medical colleges would be nominated to be members of State/District Outbreak Investigation Teams. In some districts, there may be inadequacy of such specialists. Medical college faculty could even be nominated in DOIT of those districts where Medical Colleges are not located. Each State would constitute State Outbreak Investigation Team where key faculty from reputed Medical Colleges would invariably be nominated.

- Surveillance of NCD Risk Factors: Periodic Surveys will be organized by the Central Surveillance Unit for NCD risk factors in randomly selected districts. Eligible Government Medical Colleges as well as NGOs/Private institutions would undertake these surveys.
- Training: Government of India would organize Training of District Surveillance Team in identified Institutions including selected medical Colleges. Training of other categories of personnel like Medical Officers, District level Lab technicians, Data Managers etc. would be undertaken by Medical Colleges identified by the State.
- Other Areas: Selected Medical Colleges would be able to participate in other areas of the project like Internal and External Quality Assurance Surveys and evaluation studies during the course of the Project. “

8. NCD Risk Factor Surveillance

A protocol has been developed for NCD Risk factor Surveillance in which house to house surveys would be conducted every 3 years with state as the sampling units. Following Risk factors would be included in the survey:

- Alcohol consumption
- Tobacco consumption
- Inadequate intake of fruits and vegetables
- Physical inactivity
- Obesity
 - ⇒ Body Mass Index (BMI)
 - ⇒ Waist circumference
- Elevated blood pressure

- Biochemical Parameters (Fasting)

- ⇒ Lipids
 - ✓ Total Cholesterol
 - ✓ HDL cholesterol
 - ✓ Triglycerides
- ⇒ Plasma glucose

WHO STEP Methodology and Questionnaire will be adopted for NCD Surveillance.

9. Project Funding

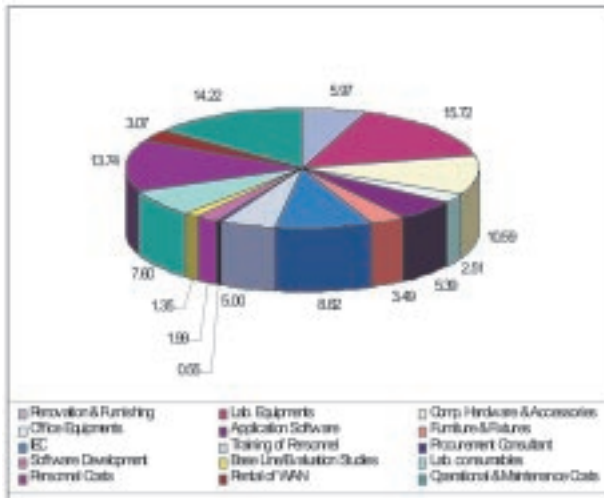
Funds are released under IDSP as grant-in-aid and issued as demand draft in the name of the account specified by each state. The Project authorities undertake various activities as per Project Implementation Plan by utilizing funds released by Government of India. Guidelines have been issued by Central Surveillance Units on utilization of available funds. Component wise Costs of Integrated Diseases Surveillance Project are as follows: -

Project Components	Grand Total	Percentage
Non-Recurring :		
Renovation & Furnishing	24.36	5.97
Laboratory Equipments	64.19	15.72
Computer Hardware & Accessories	43.26	10.59
Office Equipments	10.25	2.51
Application Software	22.00	5.39
Furniture & Fixtures	14.25	3.49
IEC	36.01	8.82
Training of Personnel	20.43	5.00
Procurement consultant	2.25	0.55
Software Development	8.11	1.99
Base Line/Evaluation Studies	5.50	1.35
Recurring :		
Laboratory consumables	31.05	7.60
Personnel Costs	56.12	13.74
Rental of Wide Area Network	12.52	3.07
Operational & Maintenance Costs	58.06	14.22
Grand Total	408.36	100.00

10. Avian Flu and IDSP

During February 2006 Avian Influenza was confirmed in chickens in two states of the country Maharashtra and Gujarat who have already signed MoU to implement Integrated Diseases Surveillance Project and started activities under the Project. These outbreaks have posed risk of transmission to human

beings and thus necessitating steps to prevent and control the disease transmission. Being a zoonotic disease, steps need to be taken by the Department of Health as well as Department of Animal Husbandry.



Support for Prevention & Control of Avian Influenza:

For effective intervention to prevent spread of the disease in human beings, following urgent actions have been initiated in the country:

- Culling of affected chickens
- Preventive measures in personnel engaged in culling operations
- Prophylactic treatment of at-risk population exposed
- Screening of population in the affected areas
- Epidemic Investigation by experts
- Isolation and management of exposed persons showing clinical signs of influenza
- Supply of protective kits to personnel managing admitted cases
- Constitution of Rapid Response Teams and their training on Disease Surveillance
- Setting up of Control rooms at National Institute of Communicable Diseases as well as Department of Animal Husbandry
- Procurement of Diagnostic Kits for Avian Influenza
- Public Awareness for preventive measures

For strengthening surveillance activities in a sustainable manner, support for following long-term interventions is required:

- Strengthening of laboratories by providing required equipment and accessories.
- Diagnostic kits required for confirmation of H5N1 strain of Avian Influenza virus.
- Training of Rapid Response Teams across the country

- Multi-media approach for public awareness on prevention and control.

Some of these activities are being supported under IDSP, as it allows for urgent surveillance and rapid response in emergency situations.

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...about CDAlert

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