TRAINING MANUAL FOR PARAMEDICAL STAFF FOR HOSPITAL BASED DISEASE SURVEILLANCE

INTEGRATED DISEASE SURVEILLANCE PROJECT
NATIONAL CENTRE FOR DISEASE CONTROL

INDEX

Preface

Integrated Disease Surveillance Project (IDSP), a decentralized disease surveillance project in India was initiated by the Government of India in November 2004 with funding support from World Bank. It is intended to generate and detect early warning signals of impending outbreaks and help to initiate an effective response in a timely manner.

An important component in this regard is strengthening hospital based disease surveillance in the country for the priority diseases as identified by the project. The surveillance for probable cases under IDSP is based on the clinician's assessment of the patient based on signs and symptoms. Timely sharing of this information can help to prevent the spread of outbreaks in the community.

This document has been compiled and produced for the purpose of providing clear and concise information to paramedical staff (pharmacists, nurses, record technicians) on how to collect and put together disease surveillance data from various sources within the hospital into the IDSP prescribed formats with due importance being accorded to both inpatient as well as outpatient data.

It is hoped that this manual will help clarify the role of pharmacists and nursing staff in collating very useful hospital data for generating early warning signals of possible outbreaks in the community. Technical inputs provided by the World Health Organization (WHO) and the World Bank (WB) for review and finalization of this manual is gratefully acknowledged.

1
Introduction to IDSP

1.1 Disease Surveillance

Surveillance in its simplest form is collection of information for action. Surveillance keeps a close watch on health events occurring in the community and to detects outbreaks so that corrective action can be taken immediately.

By preventing outbreaks, the credibility of the health services is greatly improved. Hence, it is important to have a good public health surveillance system, which is able to pick up any unusual event early enough and alert decision makers enabling them to act swiftly and effectively.

The six main steps in surveillance are:

- Detection and reporting of health event;
- Collection and compilation of data;
- Investigation and confirmation (Epidemiological, clinical, laboratory);
- Analysis and interpretation of data to convert into information for response;
- Response – a link to public health program primarily actions for prevention and control;
- Feed back and dissemination of results.

1.2 Integrated Disease Surveillance Project (IDSP)

Integrated Disease Surveillance Project (IDSP), a decentralized disease surveillance project was initiated by the Government of India in November 2004 with funding support from World Bank.

It is intended to generate and detect early warning signals of impending outbreaks and help to initiate an effective response in a timely manner. In later years the routine surveillance data and trends over years will be used to predict outbreaks well in advance and initiate preventive /averting actions.

Under the project, Surveillance Units under the project have been set up at Central, State and District levels with the district being the hub of all activities. Linkages have been established with all State Head Quarters, District Head Quarters and all Government Medical Colleges on a Satellite Broadband Hybrid Network for enhanced speedy data transfer and video conferencing facilities.

1.2 (a) Objective of IDSP

The main objective of IDSP is early detection of disease outbreaks. Whenever there is a rising trend of illnesses of similar nature in any area, it is investigated by the Medical Officers/Rapid Response Teams (RRT) to verify, confirm and take up appropriate control measures for the outbreak.

1.2 (b) Information flow under IDSP

Under IDSP disease surveillance data is collected on a weekly (Monday–Sunday) basis and SOS on imminent outbreaks. The weekly data gives the time trends. The IDSP has a web portal through which information can be directly uploaded at district and is accessible at www.idsp.nic.in

1.2 (c) Reporting formats under IDSP

The information is collected on three specified reporting formats, namely "S" (suspected cases), "P" (presumptive cases) and "L" (Laboratory confirmed cases) filled by Health Workers, Clinician and Laboratory staff respectively.

Emphasis is being laid on reporting of surveillance data from major hospitals both in public and private sector and also Infectious Disease hospitals. Paramedical staff and pharmacists can be crucial links in collating the P form data from hospitals.

1.2 (d) Generating surveillance data for action

The compilation and disease outbreak alerts have been started in 2008. On an average 20-30 outbreaks are reported every week to Central Surveillance Unit, IDSP. Data analysis and action are being undertaken by respective districts.

1.2 (e) IDSP Toll Free Number

A 24X7 call center with toll free telephone no. 1075 is accessible from BSNL/MTNL telephone from all districts of the country is in operation since February 2008. This receives disease alerts from anywhere in the country and diverges the information to the respective District Surveillance Units and State Surveillance Units for verification and initiating appropriate actions wherever required.

Private practitioners are particularly encouraged to use this toll free number and report if they are seeing an unusual increase in the number or change in presentation of cases.

2
Hospital Based Disease Surveillance under IDSP

A greater emphasis is being laid on reporting of surveillance data from major hospitals both in public and private sector and Infectious Disease hospitals under the Integrated Disease Surveillance Project (IDSP).

2.1 District Health System

India's Public Health System has been developed over the years as a 3-tier system, namely primary, secondary and tertiary level of health care.

District hospitals are an essential component of the district health system and functions as a secondary level of health care which provides curative, preventive and promotive healthcare services to the people in the district.

Every district does have a district hospital; some may have separate women and children hospitals in addition. The district Health System includes, district hospitals, Sub-district/Sub-divisional hospitals, Community Health Centers, Primary Health Centers and Sub-centers. The district hospital in India caters to the people living in urban (district headquarters town and adjoining areas) and as referral for the rural people in the district.

As per the information available, 626 districts in the country at present are having about 615 district hospitals[1]. Some of the medical college hospitals or a sub-divisional hospital is found to serve as a district hospital where a district hospital as such (particularly the newly created district) has not been established.

District hospital mainly works as a curative facility, but also supports the district health system for the preventive and promotive health care of the community.

(a) Medical Colleges in the district

Medical colleges serve as referral institutes within the districts and attract population in and around the district for the advanced curative services they offer. There are over 250 Medical colleges in the country. Some of them are attached to the district hospitals and most have their own hospitals catering to large number of patients and referral of secondary and tertiary level care. The role of departments of Medicine, Pediatrics,

[1] Indian Public Health Standards
http://mohfw.nic.in/nrhm/Documents/IPHS%20for%20201%20to%20300%20bedded%20with%20Comments%20of%20Sub-group.doc

Microbiology and Community Medicine, in disease surveillance of the district is paramount.

All the major colleges also have Postgraduate Degree or Diploma courses in their programmes. In many districts, doctors from medical college hospitals are active members of the Rapid Response Teams.

Other big hospitals such as the Infectious disease (Isolation/ communicable diseases) hospitals, Corporation Hospitals, Railway Hospitals, ESI Hospitals and Missionary Hospitals also contribute to the health service delivery of the district. Some of the Infectious Diseases Hospitals are already involved in IDSP and generating important information on the diseases prevailing in the community.

(b) Private Hospitals in the district

Health care services also depend on the private health providers in most States in India. Private hospitals, nursing homes and clinics meet a large chunk of the curative needs of the urban centers. In the event of an emerging outbreak, the private sector units may feel the warning signs earlier than the public sector. It becomes crucial to engage the private hospitals and IDSP is making all out efforts for their participation in the surveillance of outbreak prone diseases.

2.2 Why capturing hospital data is important for disease surveillance under IDSP

Public sector Hospitals cater to large populations especially lower and middle socio-economic groups. They capture crucial data on many communicable diseases which are happening in the community and are major causes of morbidity and mortality. Many of these diseases also have the potential of causing large outbreaks such as Gastroenteritis, Malaria, Dengue, Leptospirosis etc.

If the hospital is able to timely notify and report a sudden increase in the number of cases of an infectious disease presenting to the hospital or clustering of cases in an area, to the district surveillance authorities, necessary corrective action can be taken to prevent spread of the outbreak and control it effectively.

2.3 Both Inpatient and Outpatient Data need to be included in hospital surveillance

All health facilities including hospitals should maintain records of patients seen. These includes all OPD and IPD cases. Address of the patients may be recorded. Severe presentations and mortality will be reflected in the inpatients and milder and earlier disease will be reflected in the outpatient surveillance data. Therefore collection of data from OPD is very important.

Surveillance as classified under IDSP

- Presumptive or probable surveillance: Diagnosis made on the typical history and clinical examination by a medical officer.
- Laboratory Confirmed: Clinical diagnosis with positive laboratory identification

Fig 1: Timely information generated by the hospitals, laboratories and clinicians can help alert the health authorities to prevent the spread of communicable diseases.

Table 1

Case Definition	Criteria	Users
Presumptive (Probable)	Typical history and clinical examination	Medical officers of primary and community health centers, Hospitals(private, Government), private practitioners
"P" form		Pharmacists can help in compiling disease surveillance data from OPDs while nurses can help in data collection from inpatients. This information needs to be collated as P form.
Confirmed "L" forms	Clinical diagnosis by a medical officer and positive laboratory identification	Laboratory staff For compiling line lists in L form, laboratory personnel shall use data from laboratory register. Nurses can help in collection of detailed information from inpatient case sheets.

3
Establishing Surveillance at Hospital Level

3.1 Role of Key stakeholders

The key stakeholders for establishing surveillance at the hospital level are the Hospital Superintendent, Nodal person (as designated by the Hospital Superintendent), doctors, the paramedical staff and laboratory staff. The role of the clinicians is paramount as the entire probable surveillance is based on their assessment of signs and symptoms of the patients presenting to the health facility.

3.2 Role of the Hospital Superintendent

The Superintendent of the hospital is the ultimate responsible authority for establishing, maintenance and reporting arrangement of surveillance in the district/major hospital. He/she may identify one or more nodal person (each department) for facilitating surveillance in respective units. The task of collating data into P form would be facilitated by paramedical staff as identified by the Hospital Superintendent.

The hospital superintendent with nodal officers should be able to map out all possible sources of data in the hospital that would ultimately be collated into the "P" and "L" form.

Role of the Nodal Officer/s

The nodal person would be responsible for day to day oversight like:

- Ensuring that the doctors sitting in OPD are writing provisional diagnosis.
- He/she would also ensure that list of conditions to be reported is placed on the table under a glass or hung on the wall at site easily visible to doctors sitting in OPD for ready reference.
- Organize a briefing to all the doctors running OPD/casualty etc. to emphasize the need for their cooperation in making surveillance possible in the larger interest of the community.
- Be able to identify impending disease outbreak/s in the community by daily/weekly analysis of IDSP data (P/L forms).
- Weekly data shared with the district authorities may be submitted for perusal of Hospital Superintendent.

3.3 Role of the Doctors

The doctor writes the provisional diagnosis in the OPD register (or in OPD chit that is later collated at the Pharmacy before giving out drugs prescribed). This important information generated in routine OPD would serve to identify impending outbreaks; hence it is important that the writing of the doctor is clear and legible.

Coming across multiple (clustering) cases from the same locality (urban ward/village) on a given day or consecutive days, one should suspect an impending outbreak and not the address to alert the DSO OVER PHONE.
The doctors in the OPD should refer at least the suspected outbreak prone cases to the laboratory for taking appropriate samples of human cases.

3.4 Role of Laboratory staff

The laboratory staff shall fill up the L form from the laboratory investigation register being maintained routinely in the facility/hospital, (See Annexure III). The line listing of all positive cases of diseases to be reported under IDSP requires: Name, age/sex and address details of the patient, hence it is important to note the registration number of the patient.

3.5 Role of the Paramedical staff (Pharmacists, Nurses)

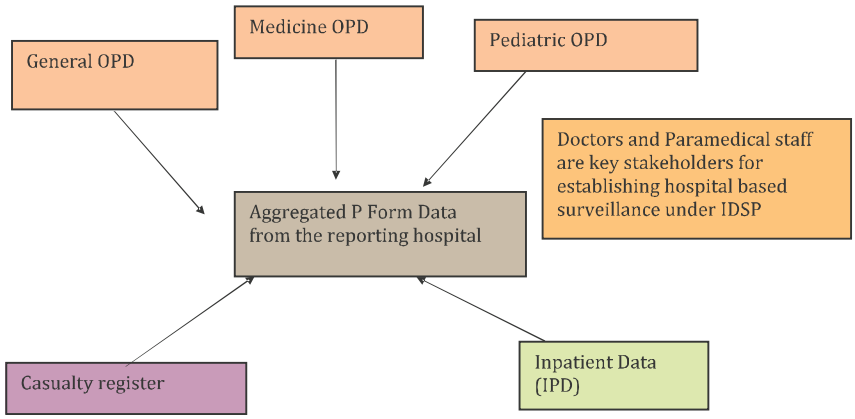
The P form reporting under IDSP is to be done as per information generated by the clinician's. The pharmacists shall collect information from OPDs and nurses from the in-patient case sheets and enter into daily Tally Sheet. At the end of the week (every Monday), data would be collated into P form as per IDSP. Nurses can also facilitate in obtaining detailed information on laboratory confirmed cases.

It is important that the data that is generated be uniform, regular and timely [See Annexure I for P form]. It is important that the clinician writes the diagnosis clearly so that important surveillance data can be collected and collated into the final P form reporting by the pharmacist and other paramedical workers.

3.6 Mapping All Sources of Data

The hospital superintendent with nodal officers should be able to map out all possible sources of data in the hospital that would ultimately be collated into the P form and L form. In a district/block hospital, data capture from emergency/casualty register and the OPD (outpatient register) would be vital. The two specialty branches which are crucial for generating early warning signals are medicine and pediatrics. The in-patient register (usually maintained by the hospital nurse in most hospitals) also needs to be entered into the collated form at the end of the week.

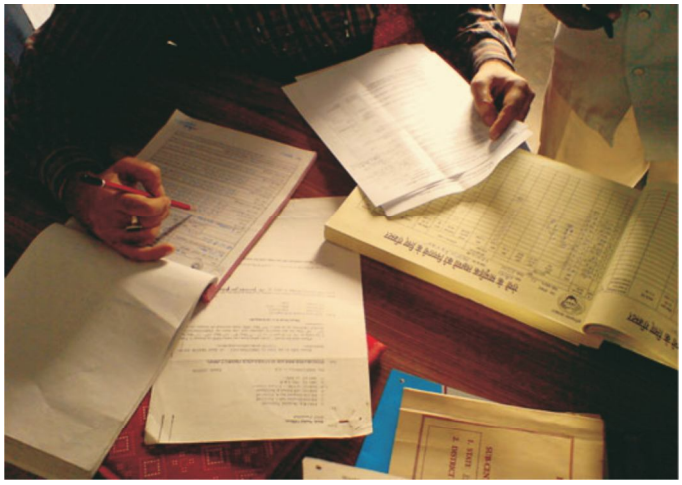
Fig 2: Mapping the sources of data to be collated in the P form under IDSP



4
Translating Data to Requisite Forms for Weekly Reporting

- The designated person (pharmacist/nurse/other) responsible for collating IDSP surveillance information needs to understand the basis of compiling this information and ensure that proper and complete information is collected, collated and shared with the District Surveillance Officers.
- The pharmacist needs to be familiar with the common epidemic prone diseases in the State and those that are to be included in the IDSP form [see Annexure II for description of IDSP diseases]. With this basic knowledge, he/she is expected to read the provisional diagnosis written by the doctor and be able to collate that as per IDSP, P format.

Fig 3: A Pharmacist noting down details of cases from OPD register



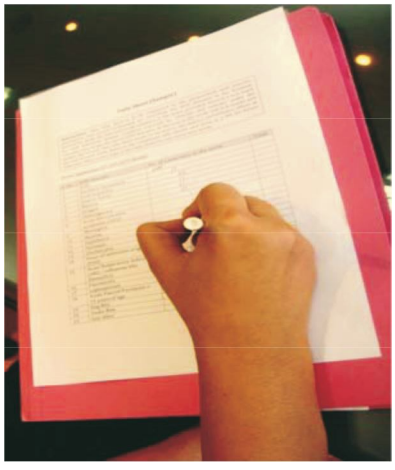


Fig 4: A Paramedical staff filling the Daily Tally Sheet.

Suspecting Outbreak based on Tally number

- Outbreak is a term used in epidemiology to describe an occurrence of a disease or illnesses of similar nature occurring in greater number than normal expectation in a particular time and place. It may be small and localized group or impact upon thousands of people.
- One case of a rare condition like plague, polio or two linked cases of a uncomon infectious disease may be sufficient to constitute an outbreak.

❒ *Recognizing an Early Warning Signal*

If the pharmacist or nurse encounters in his/her daily tally process an unusual increase in the number of cases in any particular category, he/she recommended to call up the District Surveillance Officer (DSO) immediately and notify on telephone.

❒ Laboratory confirmed reporting in IDSP is through L form

The L form reporting in the hospital is to be done by the laboratory technical staff based on the number of samples tested and those found positive.

❒ *Role of paramedical staff in L form reporting:*

The line lists [Annexure III] of positive cases are required to be entered. This includes patient's details: Name, Age, Sex and Address.

The staff nurse should facilitate in obtaining these details from the patient data records.

Tally Sheet (Sample)

Instructions: This Tally sheet is to be completed daily by the paramedical staff (nurses, pharmacist, and record technician) for recording the IDSP diseases in the hospital. Record the week (by date and week number) in the space provided. Record a tick mark for each infectious disease condition reported by clinician and indicate under the relevant rows as per the list of IDSP diseases. At the end of the week, add tick marks and update the record. This tally sheet needs to be sent to the district surveillance officer at the end of each week. Remove the completed tally sheets and store in a file for future reference. Place a new copy of the tally sheet for use every week.

Week: September 6-12 (37th week)

S. NO.	IDSP DISEASE	NO. OF CASES SEEN IN THE WEEK							TOTAL
		Mon	Tues	Wed	Thur	Fri	Sat	Sun	
1	Acute Diarrheal Disease(including acute gastroenteritis)	III	II	II	I	II	I	I	12
2	Bacillary Dysentery	I	—	—	—	—	—	—	1
3	Viral hepatitis	—	I	II	II	I	—	—	6
4	Enteric Fever	—	—	I	—	—	—	I	2
5	Malaria	II	I	II	I	—	—	I	7
6	Dengue/ DHF/DSS	II	—	—	—	—	I	—	3
7	Chikungunya	—	—	—	—	—	—	—	0
8	Acute Encephalitis syndrome (AES)	—	—	—	—	—	—	—	0
9	Meningitis	I	—	—	—	—	—	—	1
10	Measles	—	—	—	II	—	—	—	2
11	Diphtheria	—	—	—	—	—	—	—	0
12	Pertussis	—	—	—	—	—	—	—	0
13	Chicken pox	—	—	—	—	—	I	—	1
14	Fever of unknown origin (PUO)	—	I	—	I	—	—	—	2
15	Acute Respiratory Infection (ARI) / influenza like illness(ILI)	II	III	I	~~IIII~~	I	II	—	14
16	Pneumonia	I	—	—	I	II	—	I	5
17	Leptospirosis	—	—	I	—	—	—	—	1
18	Acute Flaccid Paralysis < 15 years of age	—	—	—	—	—	—	—	0
19	Dog Bite	—	—	—	—	—	I	—	1
20	Snake Bite	—	—	—	—	—	—	—	
21	Any other	—	—	—	—	—	—	—	0

5
Communicable Diseases under IDSP

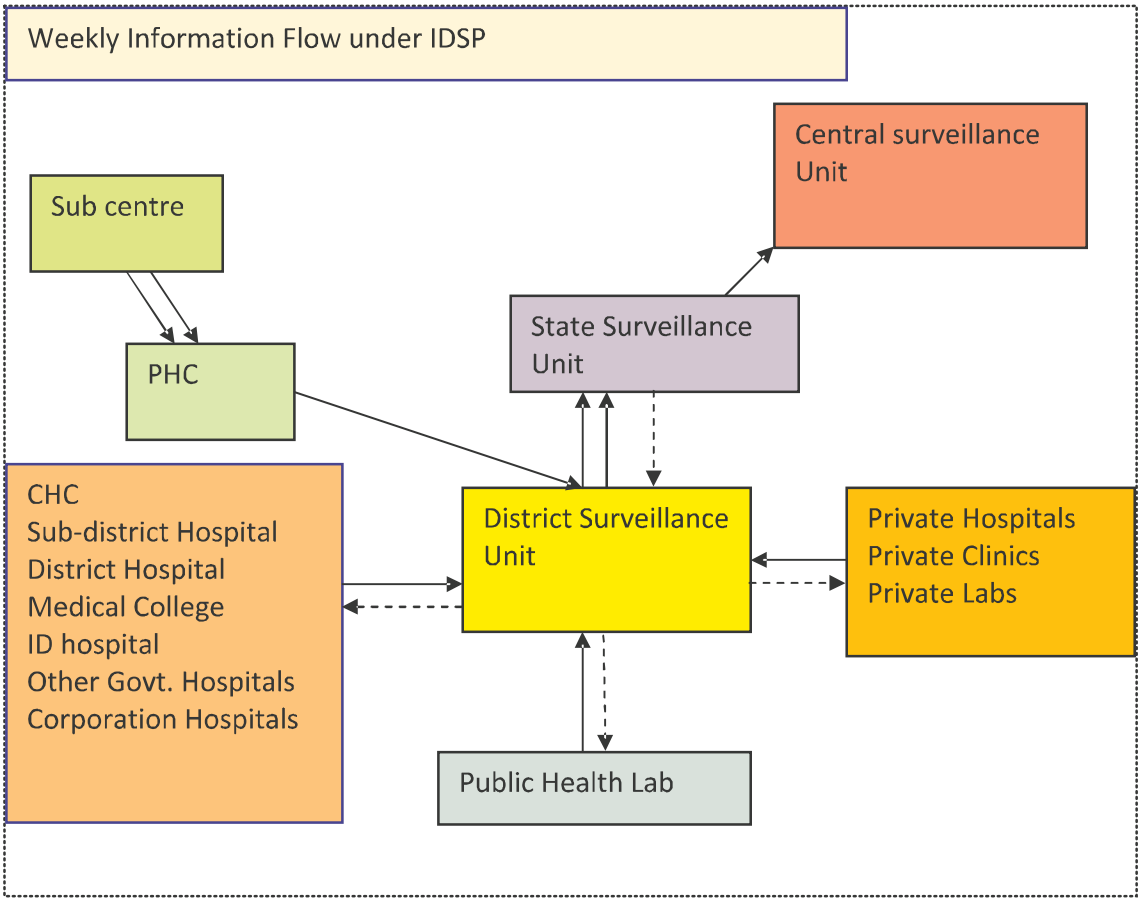
For the purpose of surveillance under IDSP, the paramedical staff needs to be familiar with the diseases that are to be reported under the P form. The list is given below:

1. Acute Diarrheal Disease (including acute gastroenteritis)
2. Bacillary Dysentery
3. Viral Hepatitis
4. Enteric Fever
5. Malaria
6. Dengue/Dengue Hemorrhagic Fever(DHF)/ Dengue shock syndrome(DSS)
7. Chikungunya
8. Acute Encephalitis Syndrome(AES)
9. Meningitis
10. Measles
11. Diphtheria
12. Pertussis
13. Chicken Pox
14. Fever of unknown origin(PUO)
15. Acute Respiratory Infection (ARI)/Influenza Like illness(ILI)
16. Pneumonia
17. Leptospirosis
18. Acute Flaccid Paralysis < 15 years of age
19. Dog Bite
20. Snake Bite
21. Any other state specific disease (check with your district surveillance officer for any additional list of diseases)
22. Unusual syndrome (not being captured by any of the above)

6
Frequency of Hospital reporting under IDSP

- Routine Reporting from the hospital to DSU needs to be done once in a week.
- Under IDSP data is collected on a weekly (Monday–Sunday) basis.
- In case there are any clustering of cases or unusual number of cases or any unusual presentation being seen of a particular disease, the pharmacist or nurse should call up district surveillance officer to inform regarding this health alert.
- The district Rapid Response Team shall investigate for any possible outbreak. District Survillance Officers will share the information with State and Center.

Fig 5: Weekly Information flow to the district under IDSP



Annexure I

P form reporting under IDSP

FORM P
(Weekly Reporting Format –IDSP)

Name of Reporting Institution:		I.D. No.:	
State:	District:	Block/Town/City:	
Officer-in-Charge	Name:	Signature:	
IDSP Reporting Week:-	Start Date:-	End Date:-	Date of Reporting:-
	___/___/_____	___/___/_____	___/___/_____

S.no	Diseases/Syndromes	No. of cases
1	Acute Diarrhoeal Disease (including acute gastroenteritis)	
2	Bacillary Dysentery	
3	Viral Hepatitis	
4	Enteric Fever	
5	Malaria	
6	Dengue / DHF / DSS	
7	Chikungunya	
8	Acute Encephalitis Syndrome	
9	Meningitis	
10	Measles	
11	Diphtheria	
12	Pertussis	
13	Chicken Pox	
14	Fever of Unknown Origin (PUO)	
15	Acute Respiratory Infection (ARI) / Influenza Like Illness (ILI)	
16	Pneumonia	
17	Leptospirosis	
18	Acute Flaccid Paralysis < 15 Years of Age	
19	Dog bite	
20	Snake bite	
21	Any other State Specific Disease (Specify)	
22	Unusual Syndromes NOT Captured Above (Specify clinical diagnosis)	
	Total New OPD attendance (Not to be filled up when data collected for indoor cases)	
	Action taken in brief if unusual increase noticed in cases/deaths for any of the above diseases	

Annexure II

Tally Sheet (Blank)

Instructions: This Tally sheet is to be completed daily by the paramedical staff (nurses, pharmacist, and record technician) for recording the IDSP diseases in the hospital. Record the week (by date and week number) in the space provided. Record a tick mark for each infectious disease condition reported by clinician and indicates under the relevant rows as per the list of IDSP diseases. At the end of the week, add tick marks and update the record. Remove the completed tally sheets & store in a file for future reference. Place a new copy of the tally sheet for use every week.

S. NO.	IDSP DISEASE	NO. OF CASES SEEN IN THE WEEK							TOTAL
		Mon	Tues	Wed	Thur	Fri	Sat	Sun	
1	Acute Diarrheal Disease(including acute gastroenteritis)								
2	Bacillary Dysentery								
3	Viral hepatitis								
4	Enteric Fever								
5	Malaria								
6	Dengue/ DHF/DSS								
7	Chikungunya								
8	Acute Encephalitis syndrome (AES)								
9	Meningitis								
10	Measles								
11	Diphtheria								
12	Pertussis								
13	Chicken pox								
14	Fever of unknown origin (PUO)								
15	Acute Respiratory Infection (ARI) / influenza like illness(ILI)								
16	Pneumonia								
17	Leptospirosis								
18	Acute Flaccid Paralysis < 15 years of age								
19	Dog Bite								
20	Snake Bite								
21	Other								

Annexure III

L form reporting under IDSP

FORM L
(Weekly Reporting Format – IDSP)

Name of the Laboratory:		Institution:	
State:	District:	Block/Town/City:	
Officer-in-Charge:	Name:	Signature:	
IDSP Reporting Week:-	Start Date:-	End Date:-	Date of Reporting:-
	___/___/_____	___/___/_____	___/___/_____

Diseases	No. Samples Tested	No. found Positive	
Dengue / DHF / DSS			
Chikungunya			
JE			
Meningococcal Meningitis			
Typhoid Fever			
Diphtheria			
Cholera			
Shigella Dysentery			
Viral Hepatitis A			
Viral Hepatitis E			
Leptospirosis			
Malaria		PV:	PF:
Other (Specify)			
Other (Specify)			

Line List of Positive Cases (Except Malaria cases):

Name	Age (Yrs)	Sex (M/F)	Address: Village/Town	Name of Test Done	Diagnosis (Lab confirmed)

Annexure IV:

Master Data (week wise)

Wk.	ADD	Dys	Hep	Ent	Mal	Den	Chi	AES	Dip	Per	Ch. pox	PUO	ARI	Pneum	Lept	AFP	Dog bite	Sn Bite
1																		
2																		
3																		
4																		
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26																		

Wk.	ADD	Dys	Hep	Ent	Mal	Den	Chi	AES	Dip	Per	Ch. pox	PUO	ARI	Pneum	Lept	AFP	Dog bite	Sn bite
27																		
28																		
29																		
30																		
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ADD- Acute Diarrheal Disease ; Dys- Dysentery ; Hep- Hepatitis; Ent-Enteric fever; Mal- Malaria; Den- Dengue; Chi-Chikungunya; AES: Acute encephalitis syndrome; Dip: Diphtheria. Per: Pertussis, Ch pox: chickenpox; PUO-pyrexia of unknown origin; ARI: Acute Respiratory illness; Pneum: pneumonia; Lep: Leptospirosis; AFP: Acute flaccid paralysis; Sn bite: Snake bite