Integrated Disease Surveillance Programme (IDSP) Disease Pattern and its Load on a tertiary level Hospital: A Cross-Sectional Study

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Abstract*—To strengthen the surveillance system in India, Integrated Disease Surveillance Program (IDSP) was launched in 2004. The frequent occurrence of epidemics even after the launching of the IDSP was an indication toward inadequacy of the system. The aim of the this study was to find out the IDSP disease pattern and load on a tertiary hospital. It was cross-sectional study carried out in hospitals attached to SMS medical College, Jaipur (Rajasthan) India. Weekly report of IDSP in 'P' Form was collected from SMS Medical College, Hospitals. Data related to IDSP diseases were gathered from these reports. These reports were analysed in percentage and proportion. It was observed in this study that among IDSP diseases most common was fever of unknown origin accounting total 93 (23.97%) cases followed by Acute Diarrheal including Ac. Gastroenteritis, Acute Respiratory Infection (ARI) Influenza like illness (ILI), Pneumonia, Malaria, Viral hepatitis etc. Distribution of various IDSP diseases were with significant variation in pediatric and adult population. Among pediatric population ADD was most common whereas in adult population ARIs were most common. Even after launching of more than a decade, a sizable burden of IDSP diseases is there at tertiary level hospital, who could be treated at peripheral health institutes like Sub centre and Primary health centre. So there is a strong need for IDSP disease and its toll free no awareness.*

Key words: Integrated Diseases Survillance Programme (IDSP), Communicable Diseases, Survillance

I. INTRODUCTION

Integrated Disease Surveillance Programme (IDSP) was launched with World Bank assistance in November 2004 to detect and respond to disease outbreaks quickly. The project was extended for 2 years in March 2010 i.e. from April 2010 to March 2012, World Bank funds were available for Central Surveillance Unit (CSU) at NCDC & 9 identified states (Uttarakhand, Rajasthan, Punjab, Maharashtra, Gujarat, Tamil Nadu, Karnataka, Andhra Pradesh and West Bengal) and the rest 26 states/UTs were funded from domestic budget. Programme continues during 12th Plan (2012-17) under NHM.[1]

IDSP is a decentralized, state based surveillance program which is intended to detect early warning signals of outbreaks and help to initiate an effective response in a timely manner. It is also expected to monitor progress of on-going disease control programs and help allocate health resources more efficiently. Under this weekly disease surveillance data on epidemic prone disease are being collected from reporting units such as sub centers, primary health centers, community health centers, hospitals including government and private sector hospitals and medical colleges. The data are being collected on 'S' syndromic; 'P' probable; & 'L' laboratory formats using standard case definitions. Presently, more than 90% districts report such weekly data through e-mail/portal (www.idsp.nic.in). The weekly data are analyzed by SSU/DSU for disease trends. Whenever there is rising trend of illnesses, it is investigated by the RRT to diagnose and control the outbreak. States/districts have been asked to notify the outbreaks immediately to the system. On an average, 30-40 outbreaks are reported every week by

the States. 553 outbreaks were reported and responded to by states in 2008, 799 outbreaks in 2009, 990 in 2010, 1675 outbreaks in 2011, 1584 outbreaks in 2012, 1964 outbreaks in 2013, 1562 outbreaks in 2014 and 311 outbreaks have been reported till 15th March 2015. District laboratories are being strengthened for diagnosis of epidemic prone diseases. These labs are also being supported by a contractual microbiologist to manage the lab and an annual grant of Rs 2 lakh per annum per lab for reagents and consumables. Till date 29 States (65 labs) have completed the procurement. In addition, a network of 12 laboratories has been developed for Influenza surveillance in the country.[1]

But the frequent occurrence of epidemics even after launching of the IDSP,[2-6] was an indication toward inadequacy of the surveillance system and/or preparedness to identify and control outbreaks in a timely manner.

India has long experienced one of the highest burdens of infectious diseases in the world having factors like large population, high poverty levels, poor sanitation, and problems with access to health care and preventive services. It has traditionally been difficult to monitor disease burden and trends in India, even more difficult to detect, diagnose, and control outbreaks until they had become quite large. This present study was planned to assess IDSP disease pattern and load at a tertiary care hospital in Rajasthan.

II. METHODOLOGY

A cross-sectional study was carried out by Department of Community Medicine of SMS Medical college, Jaipur (Rajasthan) India. For the study purpose 'P' forms of hospitals attached to SMS Medical College were collected of one week of May 2014 i.e. week starting from 5.5.14 to 11.5.14. data related to objectives were collected on MS Excel 2007. These reports were tabulated, analyzed using percentages and proportions and interpreted accordingly. These reports were analyzed to find out IDSP disease pattern and its load on various department/hospitals of SMS Medical College.

III. RESULTS

Among all IDSP diseases, most common was fever of unknown origin accounting total 93 (23.97%) cases followed by Acute Diarrheal including Ac. Gastroenteritis, Acute Respiratory Infection (ARI) Influenza like illness (ILI), Pneumonia, Malaria, Viral hepatitis etc. Diseases accounting between 5-10% were Malaria, Meningitis and Viral hepatitis. Diseases accounting for less than 5% were Ac. encephalitis Syndrome, Enteric Fever, Dengue/DHF/DSS, Bacillary discentry, Pertusis, Dog bite (Hydrophobia) and Snake bite. None of the case was reported of Chikungunia, Measles, Diphtheria, Chicken Pox, Leptospirosis, Ac. Flaccid Paralysis and Scrub Typhus. None of any other specific disease or syndrome was captured. (Table 1)

Table 1

IDSP Disease Pattern and Load at Hospitals Attached to SMS Medical College

S. No	Disease/Syndrome	Total No. of patient	Percentage of patient
1	Acute Diarrheal including Acute gastroenteritis	88	22.68
2	Bacillary Dysentery	4	1.03
3	Viral Hepatitis	21	5.41
4	Enteric Fever	16	4.12
5	Malaria	23	5.93
6	Dengue /DHF/DSS	8	2.06
7	Chikingunya	0	0.00
8	Acute Encephalitis Syndrome	17	4.38
9	Meningitis	22	5.67
10	Measles	0	0.00
11	Diphtheria	0	0.00
12	Pertusis	3	0.77
13	Chicken Pox	0	0.00
14	Fever of unknown origin (PUO)	93	23.97
15	Acute Respiratory Infection (ARI)/ Influenza like illness(ILI)	51	13.14
16	Pneumonia	41	10.57
17	Leptospirosis	0	0.00
18	Acute Flaccid Paralysis <15 years of age	0	0.00
19	Dog bite -Hydrophobia	3	0.77
20	Snake bite	2	0.52
21	Scrub Typhus	0	0.00
22	Any other State specific disease (specify)	0	0.00
23	Unusual Syndromes not captured above	0	0.00

Chi-square = 107.168 with 11 degrees of freedom; P <0.001 LS=S

When distribution of these IDSP diseases were seen as per pediatric patient or adult patient, It was found that in pediatric population most common was Acute Diarrheal including Ac. Gastroenteritis accounting 48.86% of pediatric cases followed by fever of unknown origin, Pneumonia, Enteric Fever, Malaria and Viral Hepatitis. Whereas in adult Acute Respiratory Infection (ARI) Influenza like illness (ILI) was most common accounting 19.47% of adult IDSP disease cases followed by fever of unknown origin, Acute Diarrheal including Ac. Gastroenteritis, Pneumonia, Malaria, Viral hepatitis, Meningitis, Ac. encephalitis Syndrome, Enteric Fever, Dengue/DHF/DSS, Bacillary discentry, Dog bite (Hydrophobia) and Snake bite. (Figure 1)

When the variation in distribution of these IDSP diseases as per pediatric and adult patient was analyzed, It was found that distribution of Acute Diarrheal including Acute Gastroenteritis, Viral Hepatitis, Malaria, Acute Encephalitis Syndrome, Fever of unknown origin and Acute Respiratory Infection (ARI)/ Influenza like illness(ILI) in pediatric and adult patient was found with significant ($p<0.05$) variation otherwise in other IDSP diseases it this variation in distribution was not found significant ($p>0.05$). (Table 2)

It was observed that proportion of Acute Diarrheal including Acute Gastroenteritis and Fever of unknown origin was significantly more in pediatrics than adult population otherwise Viral Hepatitis, Malaria, Acute Encephalitis Syndrome and Acute Respiratory Infection (ARI)/ Influenza like illness(ILI) was observed in adult population than pediatric. (Table 2)

Figure 1

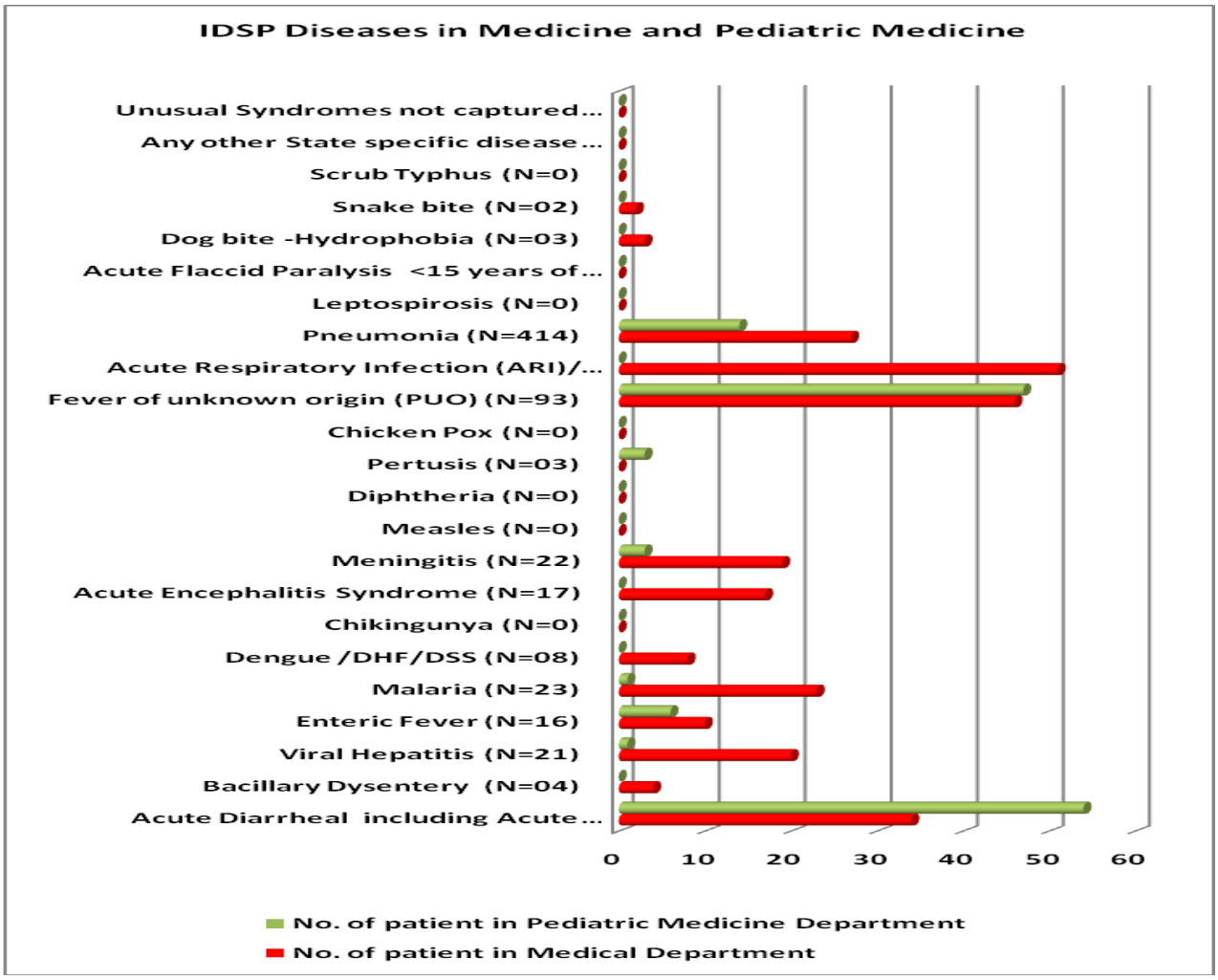

Table 2

Comparison of IDSP Disease Pattern and Load at Medicine and Pediatric Medicine Department

S. No	Disease/Syndrome	Patient in Medical Wards		Patient in Pediatric Wards		*P value	LS
1	Acute Diarrheal including Acute gastroenteritis (N=88)	34	12.98	54	42.86	**<0.001**	**S**
2	Bacillary Dysentery (N=04)	4	1.53	0	0.00	0.391	NS
3	Viral Hepatitis (N=21)	20	7.63	1	0.79	**0.011**	**S**
4	Enteric Fever (N=16)	10	3.82	6	4.76	0.868	NS
5	Malaria (N=23)	23	8.78	1	0.79	**0.005**	**S**
6	Dengue /DHF/DSS (N=08)	8	3.05	0	0.00	0.109	NS
7	Chikingunya (N=0)	0	0.00	0	0.00	NA	
8	Acute Encephalitis Syndrome (N=17)	17	6.49	0	0.00	**0.008**	**S**
9	Meningitis (N=22)	19	7.25	3	2.38	0.088	NS
10	Measles (N=0)	0	0.00	0	0.00	NA	
11	Diphtheria (N=0)	0	0.00	0	0.00	NA	
12	Pertusis (N=03)	0	0.00	3	2.38	0.059	NS
13	Chicken Pox (N=0)	0	0.00	0	0.00	NA	
14	Fever of unknown origin (PUO) (N=93)	46	17.56	47	37.30	**<0.001**	**S**
15	Acute Respiratory Infection (ARI)/ Influenza like	51	19.47	0	0.00	**<0.001**	**S**
16	Pneumonia (N=41)	27	10.31	14	11.11	0.948	NS
17	Leptospirosis (N=0)	0	0.00	0	0.00	NA	
18	Acute Flaccid Paralysis <15 years of age (N=0)	0	0.00	0	0.00	NA	
19	Dog bite -Hydrophobia (N=03)	3	1.15	0	0.00	0.0557	NS
20	Snake bite (N=02)	2	0.76	0	0.00	0.821	NS
21	Scrub Typhus (N=0)	0	0.00	0	0.00	NA	
22	Any other State specific disease (specify) (N=0)	0	0.00	0	0.00	NA	
23	Unusual Syndromes not captured above (Specify	0	0.00	0	0.00	NA	

P value with Chi-square test** ***p value < 0.05 is significant

IV. DISCUSSION

In this study, among all IDSP diseases, most common was fever of unknown origin accounting total 93 (23.97%) cases followed by Acute Diarrheal including Ac. Gastroenteritis, Acute Respiratory Infection (ARI) Influenza like illness (ILI), Pneumonia, Malaria, Viral hepatitis etc. Well comparable observations were made by another study conducted by M.K. Sharma et all[7] in Chandigarh India, who reported main load of ARIs and ADDs in their study. They reported ARIs as most common morbidity followed by ADDs comprising 59.43 and 20.86% of total cases respectively. Similar pattern has been documented in other national-level reports also. [4],[5] John *et al.,* also observed acute dysentery to be the commonest morbidity in Kerala as they had not included ARIs in their study. [6] The proportion of ARI cases observed by other investigators ranges from 30 to 50% of total. [7],[8] According to the surveillance report from Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, cases of ADDs constituted 65.84% of all major communicable diseases. [9] Whereas in this study it was 22.68%.

Pneumonia was observed 10.57% in this study which is almost same in Sharma etall[7] and. [10] who reported 10.23% and 10% respectively. Hepatitis was found in 5.42% of IDSP diseases which was little higher than Sharma etall[7] and other study[15] who reported 1.69% and 0.5% respectively.

It was also found in this study that in pediatric population most common was Acute Diarrheal including Ac. Gastroenteritis accounting 48.86% of pediatric cases followed by fever of unknown origin, Pneumonia, Enteric Fever, Malaria and Viral Hepatitis. Sharma etall[7] also reported almost in resonance with observations of this study i.e. 30.16% of the total reported pediatric infections.

Despite of fact that more than a decade has passed after launching IDSP considering it as a key step to improve public health in India[16] but till date also country is unable to diagnose and control outbreaks.[2-6]

V. CONCLUSION

Most common among IDSP diseases was fever of unknown origin accounting total 93 (23.97%) cases followed by Acute Diarrheal including Ac. Gastroenteritis, Acute Respiratory Infection (ARI) Influenza like illness (ILI), Pneumonia, Malaria, Viral hepatitis etc. Distribution of various IDSP diseases were with significant variation in pediatric and adult population. Among pediatric population ADD was most common whereas in adult population ARIs were most common. It was surprisingly that in a week period 388 cases of IDSP diseases attended at tertiary level hospital, who could be treated at peripheral health institutes like Sub centre and Primary health centre. So there is a strong need for IDSP disease and its toll free 1075 no awareness.

CONFLICT OF INTEREST

None declared till now.

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