Status of major Infectious diseases of IDSP at a tertiary level hospital in western Rajasthan in year 2015: A Record base analysis

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Abstract—*The frequent occurrence of epidemics even after the launching of the Integrated Diseases Surveillance Programme (IDSP) was an indication toward inadequacy of the control system. These epidemics/outbreaks may be identified if disease status analysis is done properly. The aim of the this study was to find out status of some of major diseases included in the IDSP in a tertiary level hospital of western Rajasthan. It was a record-based analysis carried out in hospitals attached to SMS medical College, Jaipur (Rajasthan) India. Weekly report of IDSP in 'L' Form was collected of year 2015 from SMS Medical College, Hospitals. Data related to major diseases of IDSP were gathered from these reports. These reports were analysed in percentage and proportion. It was observed among major six diseases studied in this present study, majority of cases were of Swine flue followed by Dengue, Scrub Typhus and Malaria. There was no case of Chikungunia and Enteric Fever. When deaths due to these major six diseases were observed it was found that majority of deaths occurred due to Swine flue followed by Dengue, Scrub Typhus and Malaria. Malaria death was due to Plasmodiun Falcifarrum. Maximum PCR was of Swine flue (42.32%) followed by Dengue (29.16 %), Scrub Typhus (21.87%) and Malaria (6.65%). Maximum PDR was of Swine flue (93.08%) followed by Dengue (3.08%), Scrub Typhus (3.08%) and Malaria (0.77%). Overall Case Fatality (CFR) of these diseases was found 9.2%. Regarding variation CFR of these diseases it was found that maximum CFR was of Swine flue (20.23%) followed by Scrub Typhus (1.29%), Dengue (1.06%) and Malaria (0.97%). This variation of CFR as per the type of diseases was found with significant variation ($p<0.001$).So more emphasis should be given to more fatal disease like swine flue.*

Key words: Communicable Diseases, Survillance, IDSP, PCR, PDR, CFR

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.

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.

The issue was bolstered by the World Health Assembly in the year 1995, when it advocated the strengthening of the surveillance of the diseases for the early detection of the emerging or the reemerging infections.[7] A constant watch on the changing pattern of the diseases provides us an opportunity for timely intervention as well as monitor the progress of the ongoing disease control programs and helps in optimizing the allocation of the limited resources. The success of a surveillance program depends on the "Recognition" of the diseases, the timeliness and completeness of the "Reporting," and the effectiveness of feedback "Response." [8]

So studies are done across the country to evaluate the IDSP programme and to find out status of diseases included in IDSP. There are scarcity of such studies in Rajasthan. So this study was conducted to find out status of major six diseases included in IDSP in Rajasthan in year 2015.

In Rajasthan IDSP covers 23 diseases in IDSP for weekly reports i.e. Acute Diarrheal including Acute gastroenteritis, Bacillary Dysentery, Viral Hepatitis, Enteric Fever, Malaria, Dengue /DHF/DSS, Chikungunia, Acute Encephalitis Syndrome, Meningitis, Measles, Diptheria, Pertusis, Fever of unknown origin (PUO), Acute Respiratory Infection (ARI)/ Influenza like illness(ILI), Pneumonia, Leptosirosis, Acute Flaccid Paralysis <15 years of age, Dog bite, Snake bites, Scrub Typhus and Swine Flue (H1N1). Any other unusual Syndromes were also consider for weekly report in IDSP.

This present study was aimed to find out status of Enteric Fever, Malaria, Dengue /DHF/DSS, Chikungunia, Scrub Typhus and Swine Flue (H1N1) in year 2015 in a tertiary hospital of western Rajasthan.

II. METHODOLOGY

A record-based analysis was carried out by Department of Community Medicine of SMS Medical college, Jaipur (Rajasthan) India. For the study purpose 'L' forms of hospitals attached to SMS Medical College were collected of year 2015. Data related to Enteric Fever, Malaria, Dengue /DHF/DSS, Chikungunia, Scrub Typhus and Swine Flue (H1N1) were collected on MS Excel 2007. These reports were tabulated, analyzed using percentages and proportions and interpreted accordingly. These reports were analyzed to status of these diseases in year 2015 at SMS Hospital Jaipur which is a tiertiary level hospital attached to SMS Medical College jaipur (Rajasthan) India.

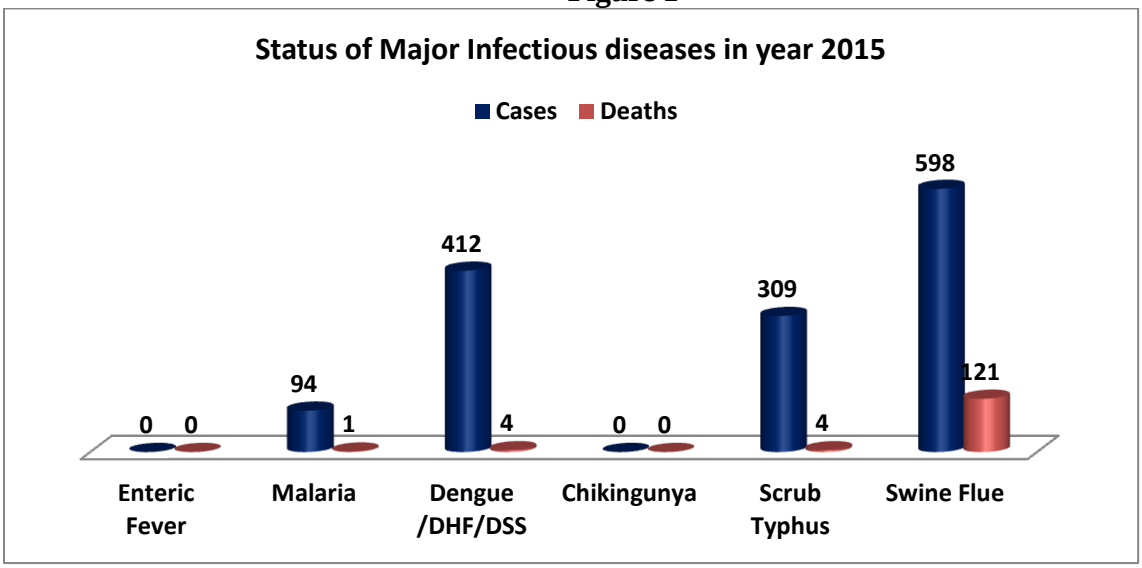
III. RESULTS

Among major six diseases studied in this present study, majority of cases were of Swine flue (598 cases) followed by Dengue(412 cases), Scrub Typhus (309 cases) and Malaria (94 cases). There was no cases of Chikungunia and Enteric Fever. (Figure 1)

When deaths due to these major six diseases were observed it was found that majority of deaths occured due to Swine flue (121 deaths) followed by Dengue (4 deaths), Scrub Typhus (4 deaths) and Malaria (1 death). Malaria death was due to Plasmodiun Falcifarrum. (Figure 1)

When Proportional Case Rate (PCR) and Proportional Death Rate (PDR) among these diseases was analyzed it was found that maximum PCR was of Swine flue (42.32%) followed by Dengue (29.16%%), Scrub Typhus (21.87%) and Malaria (6.65%). For Chikungunia and Enteric Fever it was zero. (Table 1)

Figure 1



Regarding Proportional Death Rate (PDR) of these diseases it was found that maximum PDR was of Swine flue (93.08%) followed by Dengue(3.08%%), Scrub Typhus (3.08%) and Malaria (0.77%). For Chikungunia and Enteric Fever it was zero. (Table 1)

Table 1
Proportional Case Rate(PCR) and Proportional Death Rate (PDR) of major infectious Diseases reported under IDSP Disease

S. No	Disease/Syndrome	Total No. of patient	PCR (%)	Total deaths	PDR (%)
1	Enteric Fever	0	0	0	0
2	Malaria	94	6.65	1	0.77
3	Dengue /DHF/DSS	412	29.16	4	3.08
4	Chikingunya	0	0.00	0	0.00
5	Scrub Typhus	309	21.87	4	3.08
6	Swine Flue	598	42.32	121	93.08
	Total Cases	1413	100	130	100

Overall Case Fatality (CFR) of these diseases was found 9.2%. Regarding variation CFR of these diseases it was found that maximum CFR was of Swine flue (20.23%) followed by Scrub Typhus (1.29%), Dengue (1.06%%) and Malaria (0.97%). For Chikungunia and Enteric Fever it was not calculated as there was no case of Chikungunia and Enteric Fever attended at SMS Hospital in year 2015. This variation of CFR as per the type of diseases was found with significant variation ($p<0.001$). (Table 2)

Table 2
Case Fatality Rate (CFR) of major infectious Diseases reported under IDSP Disease

S. No	Disease/Syndrome	Total No. of patient	Total No. of Deaths	Case Fatality Rate
1	Enteric Fever	0	0	0
2	Malaria	94	1	1.06
3	Dengue /DHF/DSS	412	4	0.97
4	Chikingunya	0	0	0
5	Scrub Typhus	309	4	1.29
6	Swine Flue	598	121	20.23
	Total	1413	130	9.20

Chi-square = 151.118 with 3 degrees of freedom; P <0.001 LS=S

IV. DISCUSSION

In this study, among major six diseases studied in this present study, majority of cases were of Swine flue (598 cases) followed by Dengue (412 cases), Scrub Typhus (309 cases) and Malaria (94 cases). There was no case of Chikungunia and Enteric Fever. When deaths due to these major six diseases were observed it was found that majority of deaths occurred due to Swine flue (121 deaths) followed by Dengue (4 deaths), Scrub Typhus (4 deaths) and Malaria (1 death). Malaria death was due to Plasmodiun Falcifarrum. Maximum PCR was of Swine flue (42.32%) followed by Dengue (29.16%%), Scrub Typhus (21.87%) and Malaria (6.65%). Maximum PDR was of Swine flue (93.08%) followed by Dengue(3.08%%), Scrub Typhus (3.08%) and Malaria (0.77%). Overall Case Fatality (CFR) of these diseases was found 9.2%. Regarding variation CFR of these diseases it was found that maximum CFR was of Swine flue (20.23%) followed by Scrub Typhus (1.29%), Dengue(1.06%%) and Malaria (0.97%). This variation of CFR as per the type of diseases was found with significant variation ($p<0.001$). Well comparable observations were made by another study conducted by M.K. Sharma et all[9] in Chandigarh India. Weekly reports of listed communicable diseases from various departments and centers of Government Medical College, Chandigarh, involved in clinical care and laboratory diagnosis, revealed that out of 14,082 cases of various communicable diseases, 9166 (64.62%) were of ARIs, 3586 (25.78%) of acute diarrheal diseases (ADDs), and 576 (4.10%) were of pulmonary tuberculosis.[10] Similar pattern has been documented in other national-level reports also.[4-6,9,11-12]

About half of the disease burden in the outpatient department of the PHC was due to the communicable diseases, while one-fifth was accounted for by the non-communicable diseases. The high prevalence of communicable diseases conforms to the situation of a developing country where communicable diseases propagate in the environment milieu of malnutrition, poverty, infection, and other social factors. The

three big infectious diseases, HIV/AIDS, TB, and malaria, claimed 5.7 million lives worldwide in 2001.[13] The relatively higher number of non-communicable diseases is an indication of the epidemiological transition and serves as an eye opener for the health planners to equip themselves against the diseases of the developed world. Studies from developed nations reveal a prominence of non-communicable diseases such as hypertension, non-articular rheumatism, accidents, and mental disorders in their people.[14]

Malaria and Viral Hepatitis. Sharma etall[9] also reported almost in resonance with observations of this study. The variations in the frequency of the occurrence of the various diseases could be attributed to the differences in the environmental and the host factors in the different geographic areas.

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 control these diseases.[2-6]

V. CONCLUSION

It was observed among major six diseases studied in this present study, majority of cases were of Swine flue followed by Dengue, Scrub Typhus and Malaria. There was no cases of Chikungunia and Enteric Fever in year 2015. Majority of deaths occurred due to Swine flue followed by Dengue, Scrub Typhus and Malaria. Malaria death was due to Plasmodiun Falcifarrum. Overall Case Fatality (CFR) of these diseases was found 9.2%. Regarding variation CFR of these diseases it was found that maximum CFR was of Swine flue (20.23%) followed by Scrub Typhus (1.29%), Dengue(1.06%%) and Malaria (0.97%). This variation of CFR as per the type of diseases was found with significant variation ($p<0.001$). So more emphasis is should be given on Swine Flue which has maximum fatality.

CONFLICT OF INTEREST

None declared till now.

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