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Original Research Article

Clinico-Epidemiological Study of Communicable Diseases Covered under Integrated Disease Surveillance Project among Inpatients in a Pediatric and Adolescent Ward in a Tertiary Care Hospital

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Abstract

Background: Surveillance is the continuous scrutiny of the factors that determine the occurrence and distribution of disease and other conditions of ill health. IDSP is a decentralized state based surveillance programme, wherein weekly disease surveillance data on epidemic prone disease are being collected from several reporting units. The objective of the study is to determine the clinico-epidemiology of the communicable diseases covered under IDSP.

Materials and Methods: Data collection will be started after obtaining clearance from the college Ethics committee. This is a record based study. Data from all the records satisfying the inclusion criteria will be collected on a weekly basis (Monday to Sunday) and analyzed for their completeness and thoroughness in recording and notification. Data will be analyzed using SPSS software and will be presented in the form of tables and figures.

Results: A total of 2716 patients were admitted over a period of 12 months from January 2016 to December 2016. Of these, 963 (35.45%) cases were due to the communicable disease covered under IDSP which comprised of 535 (55.6%) males and 428 (44.4%) females. Data was analyzed by using Statistical Package for Social Sciences (SPSS) software version 20.0

Conclusion: Cases entered in the IDSP P forms should be given codes on the respective case sheets to avoid reentry of data. Definitions delineating upper respiratory tract infections from lower respiratory tract infections should be explained. This helps in avoiding misclassifications and re-reporting of cases.

Keywords: Communicable Diseases, IDSP, Report, Surveillance, Syndrome.

Introduction

India, the second most populous country with 1.21 billion of the world's population, [1] is plagued by a multitude of infectious diseases. It is further darkened by a high rate of poverty 29.5%, poor sanitation and relative inaccessibility to medical care and preventive

services. [2] Communicable diseases are illness due to a specific infectious agent or its toxic products capable of being directly or indirectly transmitted from man to man, animal to animal, or from the environment to man or animal. [3] Of the communicable diseases Lower Respiratory Tract Infections (LRTI), Diarrheal diseases and tuberculosis (TB) are among the top 10 causes of death in our country as per WHO fact sheet 2012. [4]

The course of an epidemic is dependent on how early the outbreak is identified and how effectively specific control measures are applied. Not all outbreaks can be predicted or prevented. However, precautionary measures can be taken within the existing health infrastructure to reduce risks of outbreaks and to minimize the scale of the outbreak if it occurs.

By timely reporting of such diseases, an epidemic and in turn deaths can be prevented and hence adequate and timely reporting warrants the necessity for a programme with a robust surveillance component in it. Surveillance is considered to be the backbone for disease prevention and control. It includes data collection, compilation, analysis, interpretation and distribution for action. [3]

One such decentralized and a state based surveillance programme, launched in Nov 2004 with World Bank assistance, to detect and to respond to disease outbreaks quickly is Integrated Disease Surveillance Project (IDSP). [5]

IDSP is commenced in multiple phases throughout the India. The project inaugurated in the state of Karnataka was implemented for five years (2004-2009). [6] Under this project 23 District Laboratories, State Laboratory (PHI) and 249 CHC Laboratories were upgraded and integrated under the State Surveillance Unit at Bangalore.[7,8] Integrated disease surveillance is a combination of active and passive systems that use a single infrastructure to gather information about multiple diseases or behaviors of interest using similar structures, personnel and processes. [6]

Presently, more than 90% districts report such weekly data through e-mail/portal (www.idsp.nic.in). The weekly data are analyzed by State Surveillance Units (SSU)/ District Surveillance Units (DSU) for disease trends. Whenever there is rising trend of illnesses, it is investigated by the Rapid Response Team (RRT) to diagnose and control the outbreak. [5,9]

The reporting units converge data from both the public and private sectors in the rural and urban setups. Of these, the medical colleges which are basically teaching hospitals, are sentinel centers under the IDSP, reporting essential data to monitor the progress of the ongoing disease control programme and help allocate health resources more efficiently. [10.11]

To understand the challenges and difficulties of an IDSP sentinel center, an evaluation is must. This helps in improving the surveillance mechanism by proper interventions and corrections.

The objective of the study was to conduct a clinico-epidemiology of the communicable diseases covered under IDSP among the paediatric inpatients of Vani Vilas Hospital (VVH), Bangalore Medical College and Research Institute (BMCRI), Bangalore, Karnataka.

Methods

A record based institutional study was done on the pediatric patients with disease conditions covered under IDSP treated in the In Patient Department (IPD) of the Department of Paediatrics, VVH, BMCRI, Bangalore from January 2016 to December 2016. The institutional ethical committee is given the ethical approval to conduct the study.

The Inclusion criteria is all the In Patients admitted and treated for the disease conditions covered under the IDSP in the Department of Paediatrics, VVH, BMCRI, Bangalore. Data from all the records satisfying the inclusion criteria will be collected on a weekly basis (Monday to Sunday) and analyzed for their completeness and thoroughness in recording and notification. Data was collected on 963 subjects who come under IDSP. The complete clinico epidemiological data was collected during the study.

Statistics

The information obtained was converted into a computer based spreadsheet using Microsoft Excel software version 2010 and analyzed by using Statistical Package for Social Sciences (SPSS) software version 20.0.Descriptive statistics was used as necessary and all qualitative variables were presented as frequency and percentages.

Results

A total of 2716 patients were admitted in the pediatrics medical wards of VVH from January 2016 to December 2016. Of these, 963 (35.45%) cases were due to the communicable diseases covered under IDSP admitted at an average of 2.64 cases per day. The average of 3 out of every 8 cases being admitted per day, reveals that nearly 38% of the daily admissions are due to communicable diseases. Majority of the children 428 (44.44%) were found to be in the age-group 0-1 (Infants). The age distribution of cases were shown in Table 1.

Table 1: Age distribution of cases

S. No.	Age Group (In Years)	Number (Percentage)
1	0-1	428 (44.44)
2	2-5	224 (23.26)
3	6-10	161 (16.72)
4	11-15	119 (12.36)
5	16-19	31 (3.22)
Total		963 (100)

Of the 963 children, 535 (55.6%) are males and 428 (44.4%) are females. Figure 1 shows the gender distribution.

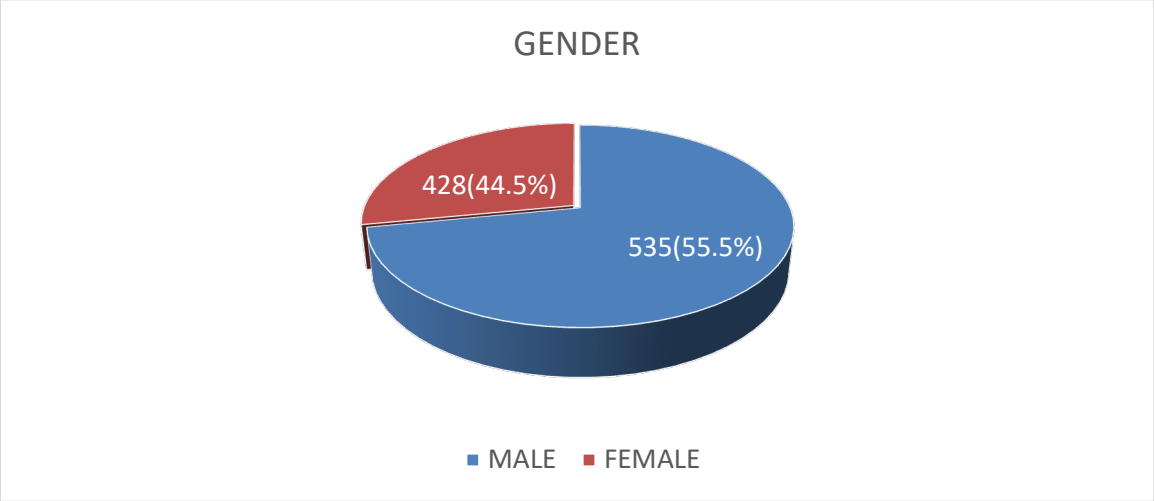

Figure 1: Gender distribution of cases

Majority of the study population are Hindus 704 (73.10%), followed by Muslims 251 (26.10%) and Christians 8 (0.80%). Most of the study subjects are from Bangalore 694 (72.10%), followed by other districts 241 (25.0%) and other states 28 (2.90%). The month wise distribution of cases admitted in pediatric medical ward of VVH shown in table 2

Table 2: Month wise distribution of cases admitted in pediatric medical ward of VVH

Diseases	Months						
	1,2	3,4	5,6	7,8	9,10	11,12	Total
1.ADD	22	32	32	6	13	43	149
2.Viral Hepatitis	1	3	0	1	1	3	9
3.Enteric fever	1	6	6	2	5	8	28
4.Malaria	3	1	4	4	3	0	15
5.Dengue	8	7	17	17	73	100	222
6.AES	0	2	3	2	7	8	22
7.Meningitis	2	1	0	0	3	0	6
8.Measles	5	9	3	1	0	1	19
9.Diphtheria	0	1	0	2	0	1	4
10.PUO	5	7	5	5	10	17	49
11.Pneumonia	43	45	18	23	128	40	297
12.Sepsis	1	3	0	5	5	9	27
13.LRTI	5	9	8	5	29	19	75
14.Rickettsia	2	0	0	0	1	7	11
15.Tuberculosis	9	2	7	0	5	7	30
Total	108	128	107	74	283	263	963

Among the districts, the most number of cases are reported in Chikkabalapur 80 (8.40%) cases followed by Tumkur 74 (7.70%) and Ramnagara 61 (6.30%) cases. Among the states the most number of cases are reported in Karnataka 935 (97.1%), followed by Andhra Pradesh 19 (2.0) and Tamil Nadu 7 (0.7%)

Discussion

A total of 2716 patients were admitted in the pediatric medical wards of VVH over a period of 12 months from January 2016 to December 2016. Of these, 963 (35.45%) cases were due to the communicable diseases covered under IDSP admitted at an average of 2.64 cases per day. Of the 963 children, 535 (55.6%) are males and 428 (44.4%) are females.

The reports submitted by the institution to the DSU were checked for its timeliness and completeness. It has been proved that 100% of the forms that is, 52 forms one for each week in the year 2014 have been submitted on time with all the variables enlisted in the P form, every Monday of the corresponding week. Although the data was complete in terms of the surveillance aspect, notable discrepancy was found in the completeness of case reporting.

The people in Bangalore district are predominantly Hindus and are also found to form a majority in this study. 704 (73.1%) are Hindus, 251 (26.1%) are Muslims and 8(0.8%) are Christians. There are no representatives from any other religion as such. A majority of the IPD cases 694 (72.1%) admitted in the paediatric

department of VVH are from the urban and rural districts of Bangalore.

According to World Health Organization, [12] common causes accounted for 73 per cent of the 10.6 million yearly cases in children younger than age 5 years, pneumonia (19%), diarrhea (18 %), malaria (8 %) and sepsis (10 per cent). This findings is similar to our study that pneumonia, ADD, malaria and sepsis are commonly reported. These figures indicate the needs of proper education of people, particularly mothers and the presence of health facilities, where treatment is readily available at affordable cost, close to villages, as important strategies that would reduce these diseases morbidity and mortality significantly. [13]

Pneumonia alone accounts for about 293 (30.4%) of the total disease load. Childhood pneumonia is the leading single cause of mortality in children aged less than 5 years. World Development Report produced figures showing that pneumonia caused 30% of all childhood illness. [14]

Conclusion

From the present study the diseases covered under IDSP are highlighted. Cases entered in the IDSP P forms should be given codes on the respective case sheets to avoid reentry of data. Definitions delineating upper respiratory tract infections from lower respiratory tract infections should be explained and common respiratory ailments should all be included under one category. This helps in avoiding misclassifications and re- reporting of cases. Doctors should be sensitized about the programme requirements and updated at regular intervals.

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