ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 03, pp. 28593-28597, March, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

INCIDENCE OF COMMUNICABLE DISEASES IN A TERTIARY CARE CENTRE

[1]Dr. Nirmalkumar Rawandale, [2]Dr. Ananta Borde, [3]Dr. Amol Patil and [4,*]Dr. Meenakshi Narkhede

[1]Associate Professor Medicine, S.B.H. Government Medical College, Dhule
[2]Associate Professor Community Medicine, S.B.H. Government Medical College, Dhule
[3]Assistant Professor, Community Medicine, S.B.H. Government Medical College, Dhule
[4]Professor General Medicine, S.B.H. Government Medical College, Dhule

ARTICLE INFO

Article History:
Received 29th December, 2015
Received in revised form
24th January, 2016
Accepted 17th February, 2016
Published online 31st March, 2016

Key words:

Communicable Diseases,
IDSP.

ABSTRACT

Communicable diseases still remain a major cause of morbidity and mortality and is a major health concern. Present study was done to document incidence of various communicable diseases in a patient population attending tertiary care centre of north Maharashtra. Methodology- In this retrospective observational study with the help of data entry operator IDSP records from civil hospital Dhule were searched for the years January 2011 to December 2013. P and L forms data was collected and analysed. Results-Highest number of Dengue, typhoid and diphtheria cases were there in the year 2012. Number of cases of Chickengunya, plasmodium vivax and falciparum cases were highest in the year 2011. With the availability of Hepatits B detection kits there were 132 cases of Hepatitis B positive detected in the year 2012. Conclusions- This study was restricted to the reporting of different communicable diseases in the population attending civil hospital Dhule from year 2011 to 2013.

Citation: Dr. Nirmalkumar Rawandale, Dr. Ananta Borde, Dr. Amol Patil and Dr. Meenakshi Narkhede, 2016. "Incidence of communicable diseases in a tertiary care centre", *International Journal of Current Research*, 8, (03), 28593-28597.

INTRODUCTION

Communicable diseases spread from one person to another or from an animal to a person. The spread often happens via airborne viruses or bacteria, but also through blood or other bodily fluid. The terms infectious and contagious are also used to describe communicable disease (www.globalhealth.gov /global- health-topics/communicable-diseases/). India is undergoing an epidemiologic, demo-graphic and health transition. The expectancy of life has increased, with consequent rise in degenerative diseases of aging and life-styles. Nevertheless, communicable diseases are still dominant and constitute major public health issues. (icmr.nic.in/annual/comm.htm). Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another. Zoonotic diseases are infectious diseases of animals that can cause disease when transmitted to humans (www.who.int/topics/ infectious_ diseases/en).

****Corresponding author: Dr. Meenakshi Narkhede,***
Professor General Medicine, S.B.H. Government Medical College, Dhule.

Many infectious diseases, such as measles, chickenpox, tetanus, diphtheria, rabies, Hepatitis B can be prevented by vaccines. Frequent and thorough hand-washing also helps protect from most infectious diseases. Shri Bhausaheb Hire government medical college, Dhule is a tertiary centre, was established in the year 1989 at Dhule, a tribal district in the North Maharashtra. It is one of the premier Institutes of Khandesh region. The health care services are offered to not only the tribal population living in the Khandesh region (Dhule, Nandurbar, Jalgaon and Nashik districts). This institute is a State recognized centre for tribal research. It has excelled in areas like Sickle cell disorders, Diphtheria and Nutritional problems. There are approximately 1000 OPD patients daily. There are 21 wards and infectious disease ward is also one of the busiest ward of Dhule civil hospital. There are special rooms for patients of tetanus, rabies, diphtheria, chicken pox, diarrhoea and seasonal flu.

It is estimated that average global temperatures will have risen by 1.0–3.5 o C by 2100, increasing the likelihood of many vector-borne diseases. The temporal and spatial changes in temperature, precipitation and humidity that are expected to occur under different climate change scenarios will affect the

biology and ecology of vectors and intermediate hosts and consequently the risk of disease transmission. The risk increases because, although arthropods can regulate their internal temperature by changing their behaviour, they cannot do so physiologically and are thus critically dependent on climate for their survival and development (Lindsay and Birley, 1996). In addition to the existing drivers of vector-borne diseases, such as seasonal weather variation, socioeconomic status, vector control programmes, environmental changes and drug resistance, climate change and variability are highly likely to influence current vector-borne disease epidemiology (Andrew *et al*., 2000). Climatic and sewage conditions in the Dhule district are favourable for breeding of mosquitos. Malaria, dengue and chickenguniya are very commonly seen vector born diseases here. This study was thought of to document the number of patients attending this tertiary care centre.

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 initiate an effective response in a timely manner. Under IDSP disease surveillance data is collected on a weekly (Monday–Sunday) basis and immediate (SOS) on imminent outbreaks. The weekly data gives the time trends and silent outbreaks. The IDSP has a web portal through which information can be directly uploaded at district and is accessible at www.idsp.nic.in. The information is collected on three specified reporting formats, namely "S" (suspected cases), "P" (presumptive cases) and "L" (Laboratory confirmed cases), the data for which is generated by Health Workers, Clinician and Clinical Laboratory staff respectively. Aims and Objectives- To find out incidence of confirmed cases of various communicable diseases. Methodolgy- Infectious disease ward runs under the department of General Medicine of Shri Bhausaheb Hire Government Medical college, Dhule. It has 20 beds. Information for IDSP is sent every week from infectious disease ward, Intensive care unit, male and female medicine wards to the data entry operator of IDSP. In this retrospective observational study with the help of data entry operator IDSP records from civil hospital Dhule were searched for the years January 2011 to December 2013. P and L forms data was collected and analysed.

RESULTS

P Analysis

Table 1. Year wise suspected water borne disease reported during 2011-13

	2011	2012	2013
Acute diarrheal diseases/bacillary dysentery	1220 (76.0)	1223 (75.0)	1821 (89.0)
viral hepatitis	65 (04.0)	70 (4.0)	66 (03.0)
EF	321 (20.0)	333 (21.0)	160 (8.0)
Total	1606	1626	2041

Table 2. Yearwise reporting of suspected vector borne disease during 2011-13

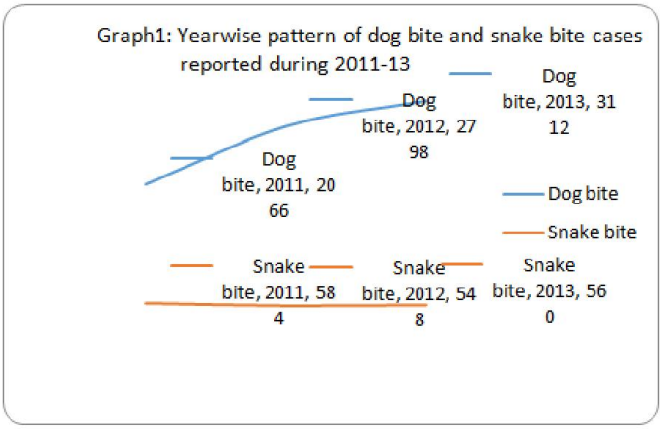
	2011	2012	2013
Malaria	261 (76.0)	209 (65.0)	191 (84.0)
Dengue	55 (16.0)	106 (33.0)	37 (16.0)
Chickengunya	26 (8.0)	008 (2.0)	00 (0.0)
Total	342	323	228

Table 3. Yearwise reporting of suspected vaccine preventable diseases during study period 2011-13

	2011	2012	2013
Measles	16 (17.0)	17 (16.0)	21 (26.0)
Diphtheria	40 (41.0)	49 (46.0)	08 (10.0)
Pertusis	04 (04.0)	00 (00.0)	00 (00.0)
Tetanus	17 (18.0)	23 (21.0)	32 (39.0)
Chickepox	13 (14.0)	12 (11.0)	09 (11.0)
Hydrophobia	06 (06.0)	07 (06.0)	11 (14.0)
Total	96	108	81

Table 4. Year wise pattern of Dog bite and suspected hydrophobia cases reported during 2011-13

	2011	2012	2013
Dog bite	2066	2798	3112
Hydrophobia	6	7	11



DISCUSSION

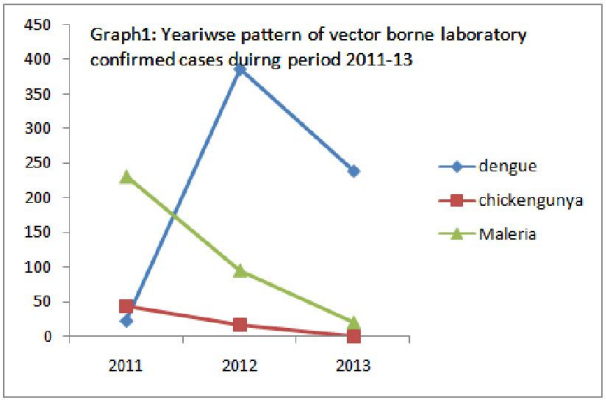
On analysis of IDSP data of civil hospital Dhule it was observed that maximum number of suspected patients were of acute diarrhoeal diseases 1214(Year 2011), 1219 (Year 2012) and 1815(Year 2013). 6(Year 2011),4 (Year 2012), 6(Year 2013) cases of bacillary dysentery 321,333,160 cases of enteric feverfor the years from 2011 to 2013 respectively. On laboratory confirmation there were 5, 2, and 10 cases of cholera. 489,580, and 550 laboratory confirmed cases of eneric fever. On laboratory confirmation 3 and 2 cases had Hepatitis A in 2011 and 2012 respectively and 132 patients had Hepatitis B. In vaccine preventable diseases there were 19 (Year 2011), 28(Year2012) and 7 (Year 2013) laboratory confirmed cases of Diptheria, 17(Year 2011), 23(Year2012) and 32 (Year 2013) cases of Tetanus. 6 (Year 2011), 7 (Year2012) and 11 (Year 2013) cases of hydrophobia or Rabies.

Table 5. Yearwise reporting of cases admitted at hospital during period 2011-13

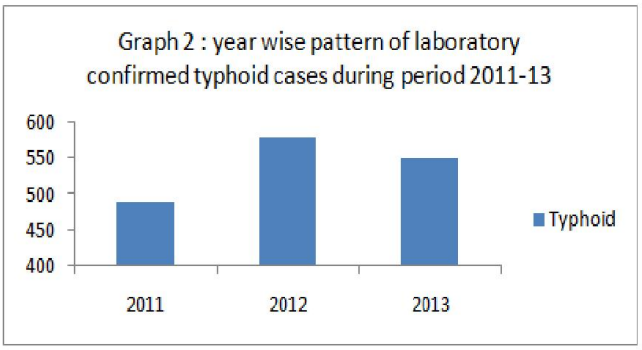
	2011	2012	2013
Acute diarrhoeal disease	1214	1219	1815
Bacillary dysentry	6	4	6
viral hepatitis	65	70	66
Enteric fever	321	333	160
Malaria	261	209	191
Dengue	55	106	37
Chickengunya	26	8	0
AES	8	30	9
Meningitis	18	26	20
Measles	16	17	21
Diphtheria	40	49	8
Pertusis	4	0	0
Chickenpox	13	12	9
Pyrexia of Unknown origin	1782	1139	349
ARI	174	129	117
Pneumonia	47	71	91
Lepto	0	1	0
AFP	7	13	6
Dog bite	2066	2798	3112
Snake bite	584	548	560
Tetanus	17	23	32
Hydrophobia	6	7	11
OPD attendence	161660	175164	177403

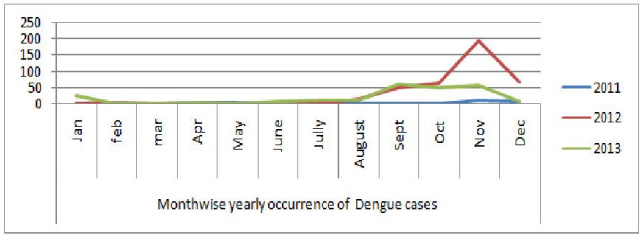
Table 6. Year wise reporting of laboratory confirmed cases during period 2011-13

Diseases	2011	2012	2013
Dengue	23	386	239
Chikangunya	43	16	0
Japanese Encephalitis	0	0	0
Meningococcal meningitis	0	0	20
Typhoid	489	580	550
Diphtheria	19	28	7
Cholera	5	2	10
Shigella	0	0	0
HAV	3	2	0
HEV	0	0	0
Leptospirosis	0	0	0
P vivax Malaria	133	64	13
P falciparum Malaria	98	32	8
HBV	0	0	132



13(Year 2011), 12(Year2012) and 9 (Year 2013) cases of chicken pox were there. 16 (Year 2011), 17(Year2012) and 21 (Year 2013) cases of measles were reported. Diptheria still remains a disease of concern. After a progressive decline that continued until the year 2006, the incidence of diphtheria reached a plateau and has remained at 4000 to 5000 cases per year globally to date (WHO, 2012). India alone accounted for 71–83 % of these cases.

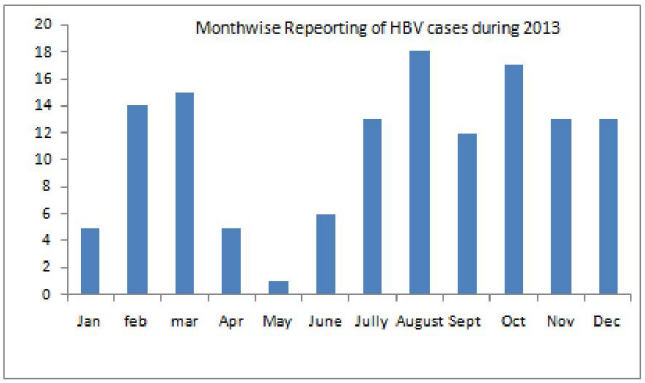


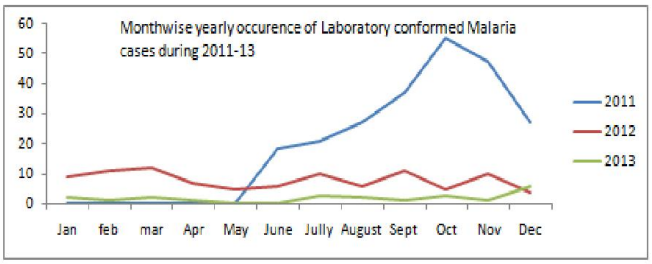


Laboratory confirmed Hepatitis cases during study period 2011-13

	2011	2012	2013
hepatits A	3	2	0
Hepatits E	0	0	0
Hepatitis B*	NA	NA	132

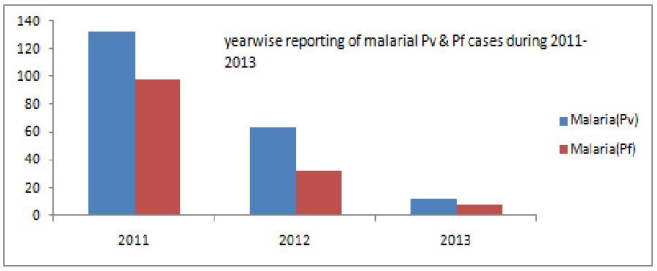
Hepatitis B reporting started since 2013

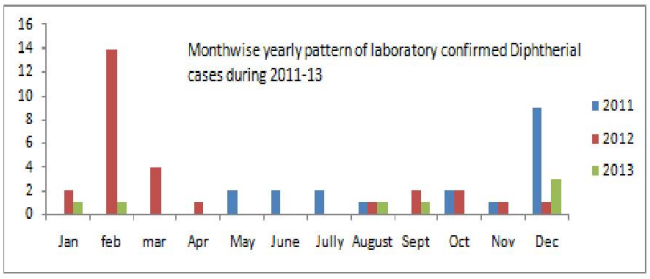




This is despite a reported increase in the coverage of the DPT (diphtheria–pertussis–tetanus) vaccination which is presently given at 6, 10 and 14 weeks and 16–24 months after birth followed by a booster dose at 5 years of age, as part of the

expanded programme of immunization now called the Universal Immunization Programme (UIP) in India.





Although the National Health Profiles released by the Government of India reported 3812, 3977, 3529, 3123 and 3485 cases of diphtheria respectively from 2007 to 2011, detailed literature on the occurrence of the disease is limited to some studies reported from Delhi and adjoining states in North India, Assam in North East India, Mumbai and northern parts of Maharashtra in Western India, and Hyderabad and Pondicherry in South India (CBHI, 2011; Sharma *et al*., 2007; Dravid & Joshi, 2008; Nath & Mahanta, 2010; Sashikala *et al*., 2011). The report of National Health Profiles released by the Government of India (CBHI, 2012) in 2012 showed that the number of reported cases of diphtheria in Karnataka increased from 0 in 2010 to 217 during 2012[5]. India has achieved a momentous public health feat – the elimination of maternal and neonatal tetanus. Maternal and neonatal tetanus is reduced to less than one case per 1 000 live births in all 675 districts of the country. But cases of posttraumatic tetanus are reported sporadically.

In vector born diseases 23(Year 2011), 386(Year2012) and 239 (Year 2013) laboratory confirmed cases of dengue were reported. 43(Year 2011), 16(Year2012) and 0 (Year 2013) cases were of chickengunya. 20 patients in the year 2013 had laboratory confirmed meningococcal meningitis. 133(Year 2011), 64(Year2012) and 13 (Year 2013) were plasmodium vivax malaria positive cases. 98 (Year 2011), 32(Year2012) and 8 (Year 2013) malaria patients were plasmodium falciparum positive. Vector-borne diseases represent a major public health concern in most tropical and subtropical areas. On review of literature in the studies carried out at the request of Government of Madhya Pradesh, in three locations where many VBDs are endemic. Data on malaria/filaria prevalence were collected by repeatedly undertaking cross-sectional parasitological surveys in the same areas for 3 years. For dengue and chikungunya, suspected cases were referred to the research centre. It was observed that all the diseases were commonly prevalent in the region, and showed year-to-year variation. Malaria slide positivity (the number of malaria parasitaemic cases, divided by the total number of blood smears made) was 18.7% (190/1018), 16.4% (372/2266) and 20.4% (104/509) respectively in the years 2011, 2012 and 2013. There was a strong age pattern in both Plasmodium vivax and P. falciparum. The slide vivax rate was highest among infants, at 5% (odds ratio [OR] = 3.8; 95% confidence interval [CI] = 1.5 to 9.4; P< 0.01). The prevalence of dengue was 48% (dengue viruses 1 and 4 – DENV-1 and DENV-4), 59% (DENV-1) and 34% (DENV-3) respectively, in the years 2011, 2012 and 2013 among referred samples, while for chikungunya very few samples were found to be positive (Singh, 2014).
In a study done by R. Chandran* and P. A. Azeez; Outbreak of dengue in Tamil Nadu, India, over the last 5 years (2008–2012), 22,584 dengue cases were reported from Tamil Nadu region by NVBDCP and the number of reported cases varied from year to year. The highest dengue incidences were reported in 2012 (n = 15,770) and lowest in 2008 (n = 565) (Chandran and Azeez, 2015). In the present study also dengue cases were highest in 2012. The first recorded chikungunya outbreak was in Kolkata in 1963. This was followed by epidemics in Tamil Nadu, Andhra Pradesh and Maharashtra in 1964–65 and in Barsi in 1973 (Parashar *et al*., 2012). In 2008 almost 100 000 people in different villages of Kasargodu district, Kerala were affected by chikungunya. This was followed by a large outbreak in Tirunelveli district, Tamil Nadu in 2009–2010. The CHIKV isolate was found belong to the Eastern Central Southern African genotype (E1:226A). During 2009–2010, cases were also reported from Maharashtra. In the subsequent years, CHIKV spread to other states: Goa, Orissa, Rajasthan, West Bengal, Andaman & Nicobar Islands and Puducherry (http://nvbdcp.gov.in/chikun-status.html - accessed 16 March 2014.). The year 2011 was exceptional in that cases were reported from all states except Punjab, Dadra and Nagar Haveli and Lakshadweep. Lakshadweep had a chikungunya outbreak only in 2007. In the present study highest number of chickengunya cases were there in the year 2011.

There were 2066 (Year 2011), 2798 (Year2012) and 3112 (Year 2013) reported cases of dogbite. Patients having dogbite attend opd or emergency casualty and as per guidelines they are given antirabies serum and or antirabies vaccine. In India, the issue is particularly acute. Millions of street dogs coexist with people in the country's booming cities. Indians experience among the highest rates of dog bites in the world. Thirty six percent of the world's rabies deaths occur in India, according to the World Health Organization. Being a retrospective record based study details of these dog bite cases were not studied and need another study in detail. Globally, estimates indicate that human mortality (due to endemic canine-mediated rabies) is highest in Asia, with the highest incidence and deaths reported in India. This is closely followed by Africa, however estimates of burden have always been uncertain due to the absence of reliable data[10]. Rabies is fully preventable. An estimated 45% of all deaths from rabies occur in that part of the world.2 The situation is especially pronounced in India, which reports about 18 000 to 20 000 cases of rabies a year and about 36% of the world's deaths from the disease.3 Rabies incidence in India has been constant for a decade, without any obvious declining trend, and reported incidence is probably an underestimation of true incidence because in India rabies is still not a notifiable disease.4 This situation is rooted in a general lack of awareness

of preventive measures, which translates into insufficient dog vaccination, an uncontrolled canine population, poor knowledge of proper post-exposure prophylaxis on the part of many medical professionals, and an irregular supply of anti-rabies vaccine and immunoglobulin, particularly in primary-health-care facilities (Alakes Kumar *et al*., 2014). Conclusions- Ultimate goal of this study was to document statistics of prevalence of vector borne, vaccine preventable, communicable, food and water borne diseases in a population attending a tertiary care centre of north Maharashtra. Inspite of the advancement in science and technology the population is still suffering from vaccine preventable and vector borne diseases. Diptheria, tetanus, rabies, hepatitis B like vaccine preventable diseases still remain a cause of concern as many of times there is shortage of anti diphtheriaserum, antitetanusantirabies serum. Also these are much more costlier than the vaccines.

REFERENCES

Alakes Kumar Kole a, Rammohan Roy a & Dalia Chanda Kole b. Bulletin of the World Health Organization 2014;92:230. doi: http://dx.doi.org/1 0.2471/BLT.14.136044

Andrew, K. Githeko, Steve W. 2000. Lindsay, *et al*; Climate change and vector-borne diseases: a regional analysis; Climate change and vector-borne diseases: a regional analysis. *Bulletin of the World Health Organization*, 78 (9).

Chandran*, R. and Azeez, P. A. 2015. Outbreak of dengue in Tamil Nadu, India. *Current Science*, VOL. 109, NO. 1, 10 JULY.

Lindsay, S.W. and Birley, M.H. 1996. Climate change and malaria transmission. *Annals of Tropical Medicine and Parasitology*, 90: 573–588.

Mahantesh, V. Parande,1 Aisha M. Parande,1 S. L. 2014. Lakkannavar; Diphtheria outbreak in rural North Karnataka, India. JMM Case Reports DOI 10.1099/jmmcr.0.003558.

National Vector Borne Disease Control Programme. Chikungunya fever. 2013; http://nvbdcp.gov.in/chikun-status.html - accessed 16 March 2014. (Epidemiology and burden of disease; http://www.who.int/rabies/ epidemiology/en/

Parashar, D. and Patil, D. 2012. Chikungunya: a disease re-emerged in India after 32 years. In: NIV Golden to diamond jubilee: The glorious decade. Arankalle VA, Cecilia D. Eds.. pp. 221-242.

Singh *et al*. 2014. Vector-borne diseases in central India. WHO South-East Asia Journal of Public Health | January-March | 3 (1).

www.globalhealth.gov/global-health-topics/communicable-diseases/

www.who.int/topics/infectious_diseases/en

****