Kingdom of Bahrain
Ministry of Health
Public Health Directorate

COMMUNICABLE DISEASES Bulletin

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Editorial

Communicable Disease Surveillance System in the Disease Control Section collects, compiles and analyzes data on the new cases of diseases occurring all over the Kingdom, in order to take the necessary preventive and control measures. Over decades of its dedicated work and the close watchfullness of the disease situation, relying on the data notified from various hospitals, health centers and clinics, the system has been able to identify and confront serious outbreaks that used to afflict the country and to deal with them very successfully, protecting many people and saving many more lives.

Production and dissemination of information is one of the key functions of the disease surveillance system. It aims to provide those concerned with disease control, the information they need to understand the epidemiological patterns of diseases and its change over time, between individuals and across geographic regions. Our treating physicians at the hospitals and the peripheral health care centers need to know the distribution of and the natural mechanisms by which these diseases spread in the area they serve. This will aid them in reaching a correct diagnosis of their patients' sickness and thus prescribe the effective preventive and curative measures. This process has been enforce since a long time, but it is now appearing in a new format for better readability and distribution. We hope that our readers will find it up to their expectations and will send us their valuable feedback.

Acknowledgment:

Many thanks to the health inspectors in the section for their dedicated work in surveillance and for their assistance in the preparation of the bulletin.

History of Communicable Diseases Surveillance in Bahrain

The Ministry of Health launched its first preventive program in the 1930's, at a time when malaria, smallpox, tuberculosis and trachoma were public health problems in Bahrain. Like many other countries, Bahrain too is going through the transitional stage of development. There is a declining trend in the occurrence of communicable diseases and an increasing trend in the occurrence of chronic disorders associated with ageing, cardiovascular diseases and cancers.

In recent years, the emergence of new diseases such as AIDS, Ebola hemorrhagic fever, hepatitis C, Rift Valley fever and the resurgence of old diseases such as tuberculosis, malaria, cholera and plague have posed a major challenge to public health authorities worldwide.

In view of the changing pattern of diseases, there is a need to strengthen the emerging and re-emerging diseases surveillance. The data collected through the surveillance systems will give an early warning so that preventive measures can be rapidly instituted.

One of the most effective means of controlling the spread of communicable diseases is by a proper system of diseases notification. Surveillance activities are dependent upon prompt notification received from various sources.

The disease surveillance system has been long established and is well functioning. Reporting of communicable diseases began in 1955. The surveillance system was strengthened in 1971, whereby registers for selected communicable diseases were maintained. A total of 78 sites including health centers, governmental hospital, private clinics and hospitals contribute to disease notification. All of them are required to forward the notifiable diseases return forms on a daily and weekly basis to the Communicable Diseases Section in the Directorate of Public Health. Monitoring of timeliness and completeness of receipt of reports is being carried out.

A total of 50 communicable diseases are notifiable to the Public Health Directorate in Bahrain. Notifiable returns are collected, collated and analyzed. Notification of diseases aids the public health authorities to

a. Carry out an investigation to determine the source of infection and the mode of transmission; b. Search for additional cases among contacts or in the neighborhood; c. Detect an outbreak at an early stage; d. Calculate the morbidity rates; e. Carry out research.

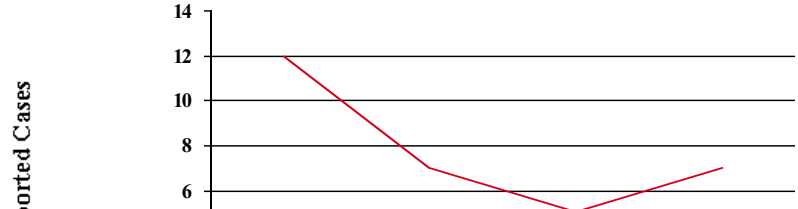
This report summarizes the reported cases and incidence rate of notifiable communicable diseases during the first half of this year. Tables 1 and 2 shows the distribution of reported incidence by four-week period.

Figure 1-7 describes the incidence of selected diseases for the first two quarters of this year as compared to the same quarters of the past few years. In addition, the trends of foodborne diseases are illustrated in figures 8-12.

Reported Cases of Selected Communicable Diseases
Bahrain, 1st and 2nd Quarters, 1999-2002

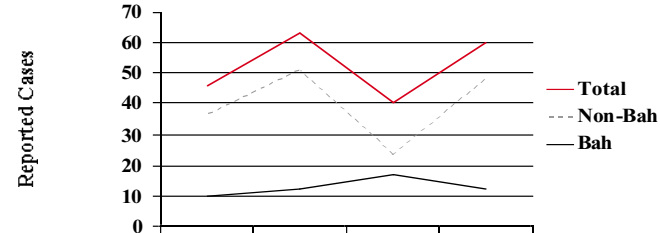
Year	1999	2000	2001	2002
Total cases	89	64	60	78
Imported cases	5	6	7	7

Figure 1 Viral Hepatitis type A



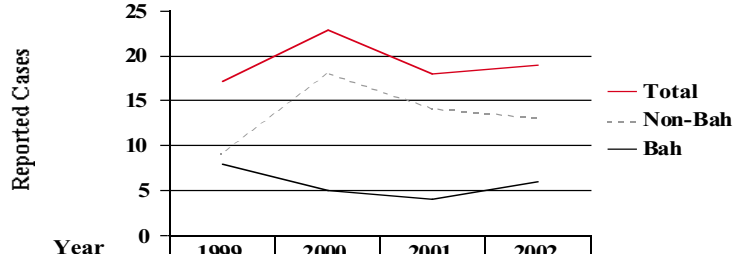
	1999	2000	2001	2002
Number of cases	12	7	5	7

Figure 2 Viral Hepatitis type B



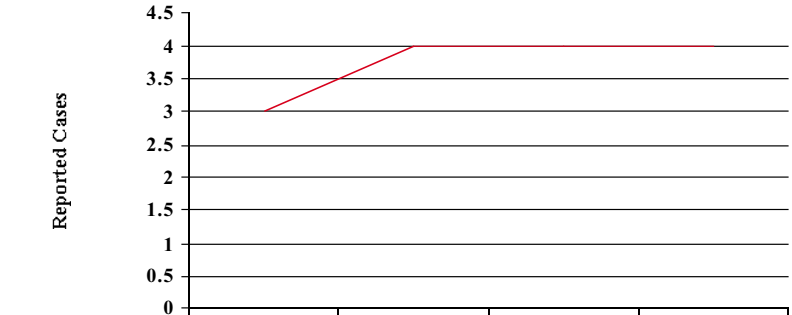
Year	1999	2000	2001	2002
Total	46	63	40	60
Non-Bah	36	51	23	48
Bah	10	12	17	12

Figure 3 Pulmonary TB



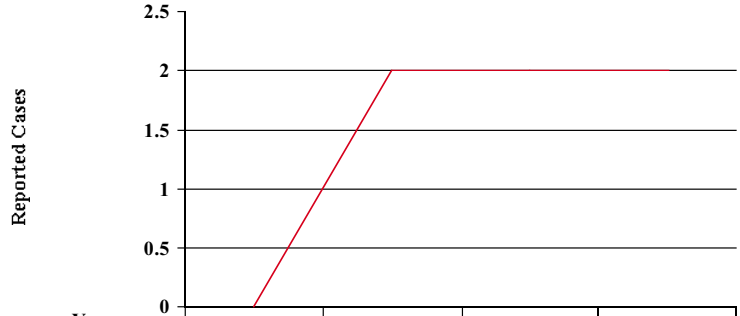
Year	1999	2000	2001	2002
Total	17	23	18	19
Non-Bah	9	18	14	13
Bah	8	5	4	6

Figure 4 Extra Pulmonary TB



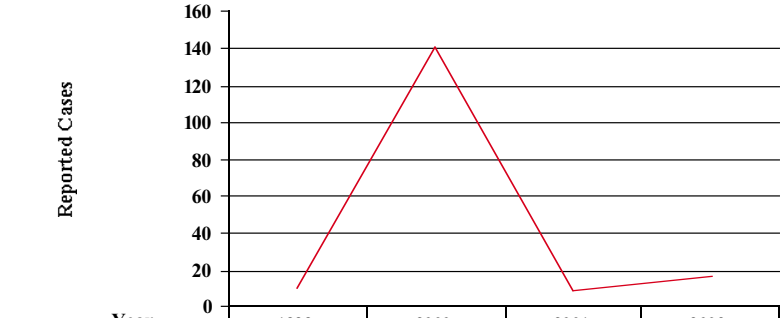
Year	1999	2000	2001	2002
Number of cases	3	4	4	4

Figure 5 Measles



Year	1999	2000	2001	2002
Number of cases	0	2	2	2

Figure 6 Rubella



Year	1999	2000	2001	2002
Number of cases	10	141	9	17

Figure 7 Mumps

Trends of Foodborne Diseases

Viral Hepatitis type A

During the period 1995-2001, a total of 1362 cases of viral hepatitis were reported. Of the total, 1111 (81.6%) were reported as hepatitis A.

Of the total type A cases, 755(68%) were indigenous cases and 356 (32%) were imported. The two peaks in the number of imported cases in 1996 and 2001 were due to travelers returning back after the summer holidays from India, Pakistan, Syria, Egypt, Yemen and Jordan (figure 8). An increased incidence of indigenous cases of hepatitis A occurred during 1997,1998 and 1999. High incidence rates were reported from Muharraq, Hamad Town and Riffa with a range of 40-79 /100,000 population. Since a sewerage system is already in existence in these three areas, contaminated leafy vegetables (local or imported) and poor hygiene may have been responsible for the transmission of the disease .

Typhoid fever

During the 7 year period 1995-2001, 245 cases of typhoid fever were reported. Of the total, 129(53%) were imported cases and 116 (47%) were indigenous. The average annual incidence of indigenous and imported cases for the 7 year period was 17 and 18 respectively. The number of indigenous cases reported in 1997 was the lowest reported since 1971 i.e the year that typhoid fever cases were registered. The number of typhoid fever cases imported into Bahrain has been stable over the years. The two peaks in incidence noted in (figure 9) is due to an increase in indigenous cases that occurred during outbreaks. Case control studies were conducted in all the outbreaks. However, neither a specific food vehicle nor a chronic carrier could be found in all the food samples tested and food handlers screened respectively. Typhoid fever has ceased to be an endemic disease in Bahrain since 1989.

Paratyphoid fever

Paratyphoid fever has never been an endemic disease in Bahrain. The few cases that are reported each year are sporadic and the vast majority are imported. There were no indigenous cases reported in 2000 and 2001. During the 7 year period, 1995-2001 44 cases were reported (figure 10). Of the total, 14 were indigenous cases and 30 imported cases.

Salmonellosis

The average number of reported cases of other salmonellosis per year for the period 1993-2001 was 284. This reported figure represents considerable underreporting. During the 9 year period , a total of 2556 cases were reported (figure 11). The serogroup distribution of the cases varied from year to year. However, the cumulative total of each is as follows: group C 686(26.8%), group B 540(21.1%), group D 434(17.0%), group E 197(7.7%), group G 50(2.0%), group A 11(0.4%) and salmonella species 638 (25%). The vast majority of cases were reported among children 0-4 years of age with a range of 34% - 51% of all cases. This age-group had the highest incidence ranging from 11.2 - 24.9 per 100,000 population.

Shigellosis

The average number of reported cases of shigellosis per year for the period 1994-2001 was 186 (figure 12). Prior to 1994, Sh. flexneri was the predominant species , but from 1994 onwards, Sh. sonnei was the predominant species in Bahrain and accounted for 53% of all cases, followed by Sh. flexneri (35%), Sh. boydii (7%) and Sh. dysenteriae (5%).

Trends of Foodborne Diseases

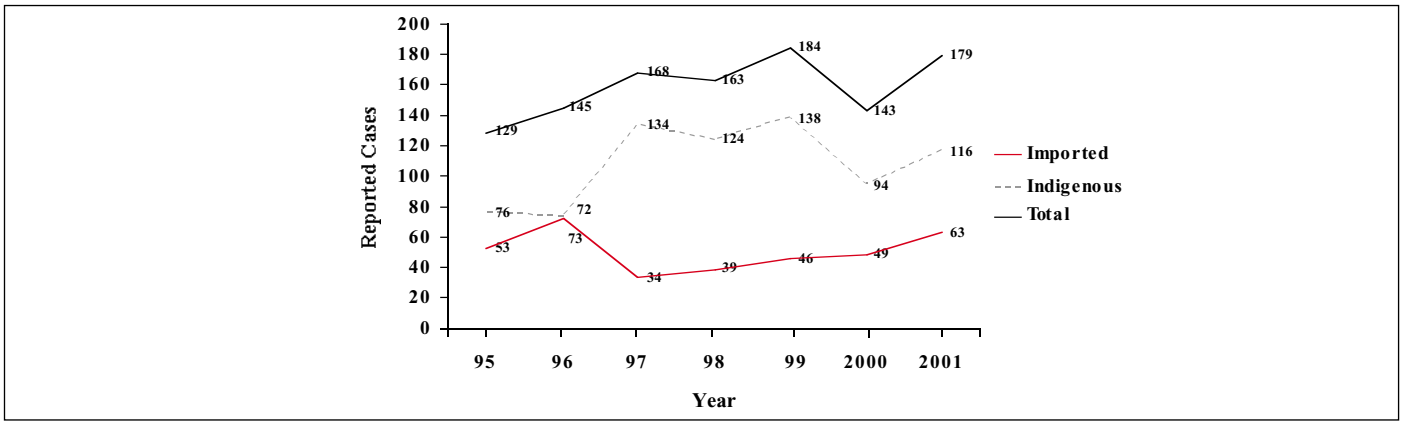


Figure 8 Viral Hepatitis type A

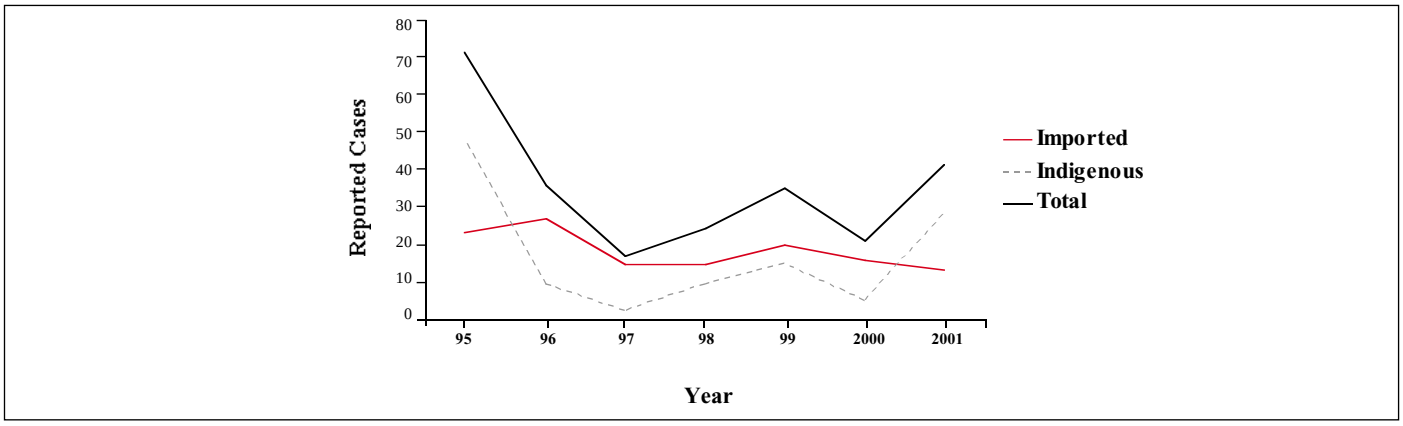


Figure 9 Typhoid fever

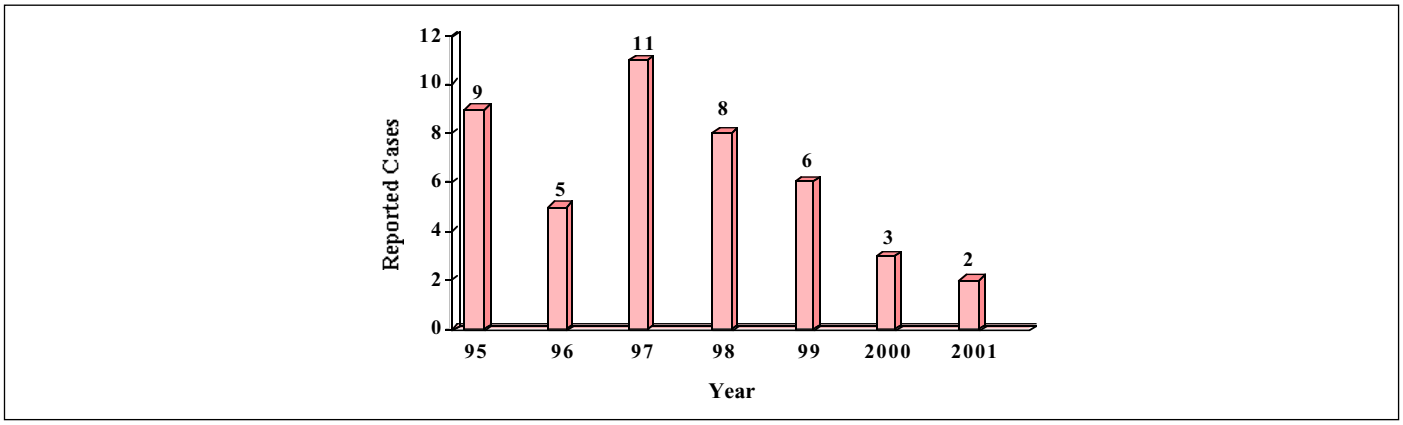


Figure 10 Paratyphoid fever

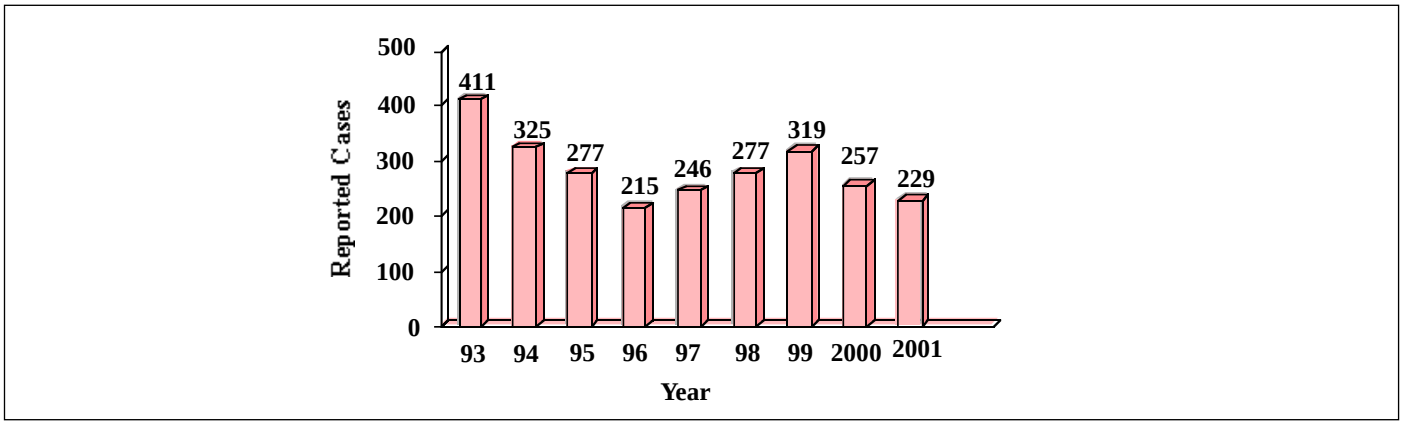


Figure 11 Salmonellosis

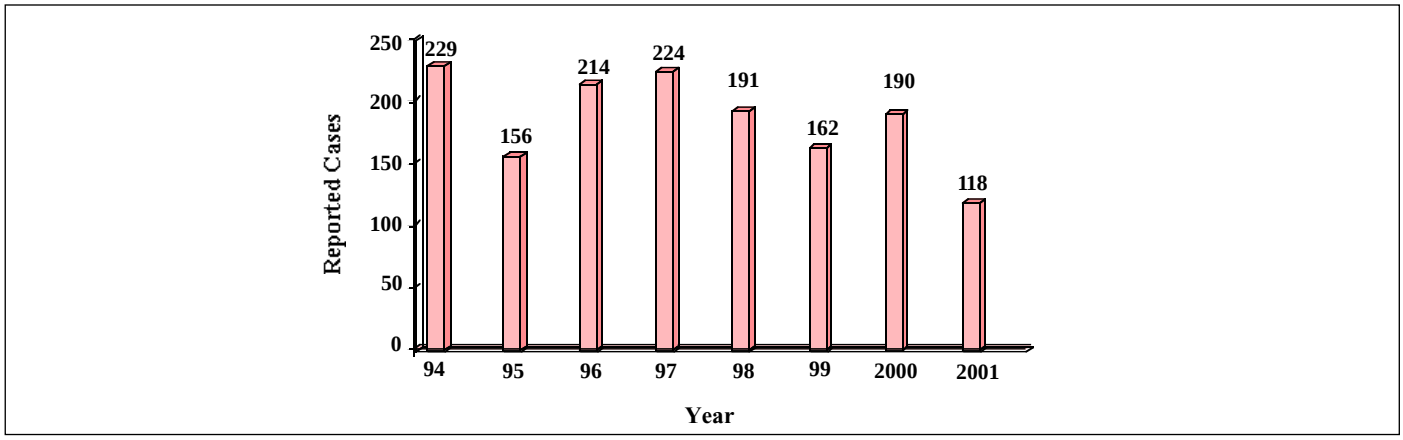


Figure 12 Shigellosis

Table 1: Reported Cases of notifiable diseases by four week period Bahrain, 30.12.01 - 15.06.02

Diseases	WK 1-4 30.12.01 26.01.02	WK 5-8 27.01.02 23.02.02	Wk 9-12 24.02.02 23.03.02	WK 13-16 24.03.02 20.04.02	WK 17-20 21.04.02 18.05.02	WK 21-24 19.05.02 15.06.02	Total
Typhoid Fever	3	4	1	3	0	10	21
Paratyphoid Fever	0	1	0	1	0	0	2
Other Salmonella inf.	6	12	11	14	18	21	82
Shigellosis	15	14	6	2	6	3	46
Amoebiasis	1	0	0	3	0	1	5
Viral Hepatitis Total	18	13	20	15	9	12	94
Type A	17	10	18	15	9	9	78
Type B	2	0	2	0	0	3	7
Type E	0	3	5	0	0	0	8
Tuberculosis Resp. Sys.	9	7	9	10	8	17	60
Tuberculosis Other Forms	3	4	0	8	3	3	19
Diphtheria	0	0	0	0	0	0	0
Whooping Cough	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0	0
Leprosy	0	0	0	0	1	0	1
Streptococcal Sore Throat	25	20	35	6	15	21	127
Meningococcal Meningitis	0	0	0	0	0	0	0
Other Meningitis	0	2	0	7	6	2	16
Syphilis	16	6	32	28	9	16	101
Gonococcal Infection	31	36	49	42	39	39	236
Other urethritis	6	7	15	6	5	3	42
Other STD's	15	10	14	24	24	0	88
Chickenpox	166	205	267	430	267	297	1664
Measles	0	1	0	0	2	1	4
Rubella	0	0	2	0	0	0	2
Mumps	1	2	2	4	4	4	17
Malaria P.Vivax	0	2	0	1	0	0	3
Malaria P.Falciparum	1	0	0	0	0	0	1

Table 2: Reported incidence rates of notifiable diseases by four week period Bahrain, 30.12.01 - 15.06.02

Diseases	WK 1-4 30.12.01 26.01.02	WK 5-8 27.01.02 23.02.02	WK 9-12 24.02.02 23.03.02	WK 13-16 24.03.02 20.04.02	WK 17-20 21.04.02 18.05.02	WK 21-24 19.05.02 15.06.02	Total
Typhoid Fever	0.46	0.61	0.15	0.46	0.00	1.53	3.21
Paratyphoid Fever	0.00	0.15	0.00	0.15	0.00	0.00	0.31
Other Salmonella Inf.	0.92	1.83	1.68	2.14	2.75	3.21	12.53
Shigellosis	2.29	2.14	0.92	0.31	0.92	0.46	7.09
Amoebiasis	0.15	0.00	0.00	0.46	0.00	0.15	0.76
Viral Hepatitis Total	2.90	1.99	3.97	2.29	1.37	1.83	14.36
Type A	2.60	1.53	2.75	2.29	1.37	1.37	11.91
Type B	0.31	0.00	0.31	0.00	0.00	0.46	1.07
Type E	0.00	0.46	0.92	0.00	0.00	0.00	1.37
Tuberculosis Resp. Sys.	1.37	1.07	1.37	1.53	1.22	2.60	9.17
Tuberculosis Other Forms	0.46	0.61	0.00	0.92	0.46	0.46	2.90
Leprosy	0.00	0.00	0.00	0.00	0.15	0.00	0.15
Streptococcocal Sore Throat	4.28	3.06	5.35	1.22	2.29	3.21	19.40
Other Meningitis	0.00	0.31	0.00	1.07	0.76	0.31	2.45
Syphilis	2.44	0.92	4.59	3.51	1.37	2.29	15.43
Gonococcal Infection	4.74	5.50	7.49	8.42	5.95	5.96	38.05
Other urethritis	0.92	1.07	2.29	0.92	0.76	0.46	6.42
Other STD's	2.44	1.53	2.14	3.67	3.67	0.00	13.44
Chickenpox	25.66	31.32	40.79	66.69	43.84	45.37	252.67
Measles	0.00	0.15	0.00	0.00	0.31	0.15	0.61
Rubella	0.00	0.00	0.31	0.00	0.00	0.00	0.31
Mumps	0.15	0.31	0.31	0.61	0.61	0.61	2.60
Malaria P.Vivax	0.00	0.31	0.00	0.15	0.00	0.00	0.46
Malaria P.Falciparum	0.15	0.00	0.00	0.00	0.00	0.00	0.15