



Kingdom of Bahrain
Ministry of Health
Public Health Directorate

Communicable Diseases

Bulletin

Editorial:

Human Behavior : A Key Factor in the Causation of Today's Communicable Diseases

Chronic non-communicable diseases, which dominate the profile of the total diseases burden in the kingdom, are known as "Man-Made Diseases". They are so called because most of their causation can be attributed to human risky behavior such as; smoking, physical inactivity, high consumption of high-fat food and low consumption of fruits and vegetables.

The same can be said about communicable diseases of today. A quick reading of their statistics reveals that many of the reported cases are those related to personal hygiene (food-borne diseases), promiscuity (Gonorrhoea, Syphilis and AIDS) and to some lesser extent, those related to drug abuse (AIDS and Hepatitis B Virus). The two most recent incidents i.e. Severe Acute Respiratory Syndrome (SARS) and Avian Influenza (or Bird-Flu) reported from South-East Asia have been related to handling infected animals or birds. Human errors (intentional and unintentional) in food handling, transportation, storage and preparation, may provoke the risk of disease especially in the first type of errors when the exposure can be common causing an outbreak of large number of cases simultaneously.

In addition, the virus causing the recent episode of Avian Influenza (H5N1), which is one of type A influenza viruses, is unable, so far, to cause widespread disease in the human

beings. But, scientists warn that such virus has the tendency to modify its genes (Antigenic Shift) and hence could become transmissible from person to person leading to highly fatal pandemics.

Prevention though of such problems of today's communicable diseases is, achievable with amazing success through organized and coordinated nationwide efforts. In the case of the Avian Flu, experts view that immediate culling of infected and exposed birds is the first line of defence for both the protection of human health and the reduction of further losses in the agricultural sector. The public should be made aware of human risky behaviors and the importance of eliminating the conditions and environments that are conducive to such behaviors. Therefore the responsibility is common and lies on the community as a whole. Improving housing and economic conditions help people lead a decent and healthy life, but it is also important to create social and cultural environment, that is inspired from our Islamic values, ethics and culture which are not only discouraging to, but also protective from unethical and unhealthy behaviors such as trade fraud, illegal sexual relationships and drug abuse. Moreover, issuing and enforcing food and environment safety policies and regulations has great impact on deterring people away from harming themselves and their community.

Editorial Board:

Chief Editor
Dr. Mariam Al Shetti
Members
Dr. Jamal Al Sayyad
Dr. E. Fernandes

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.

Reported Incidence of Selected Communicable Diseases 2nd Quarter (April-June), 1999-2003

Figure 1 Viral Hepatitis type A

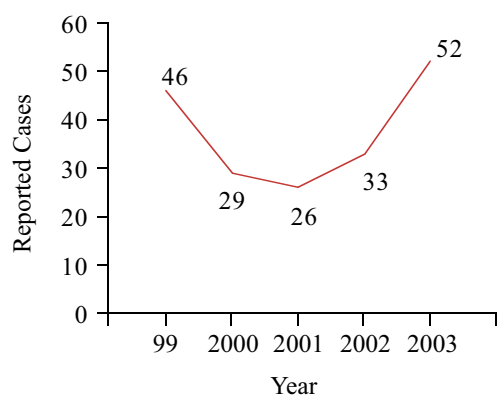


Figure 2 Viral Hepatitis type B

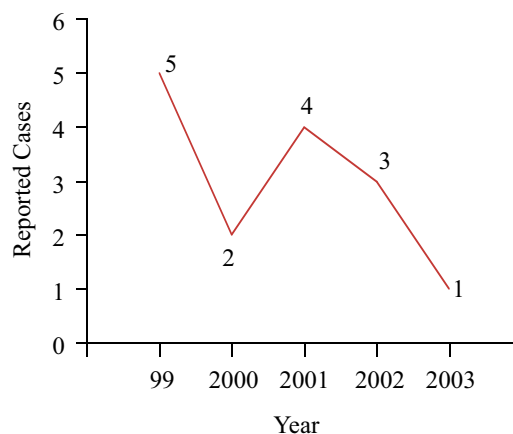


Figure 3 Pulmonary TB

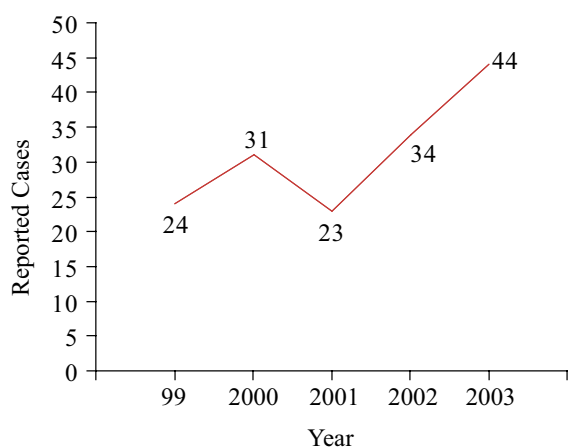


Figure 4 Extra-Pulmonary TB

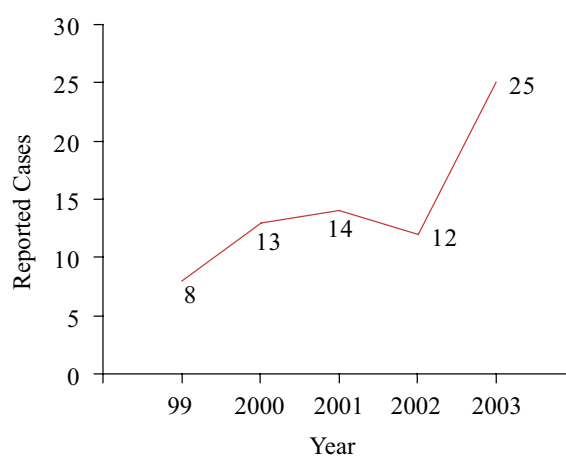


Figure 5 Measles

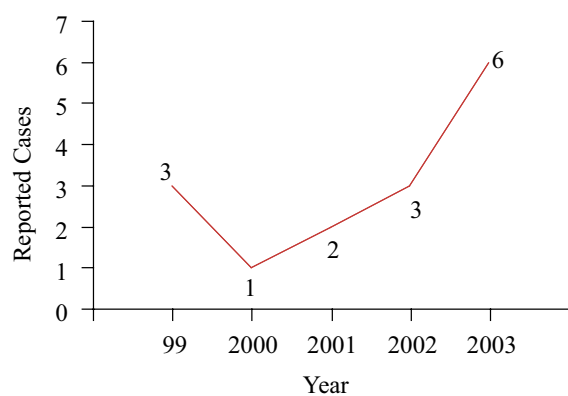
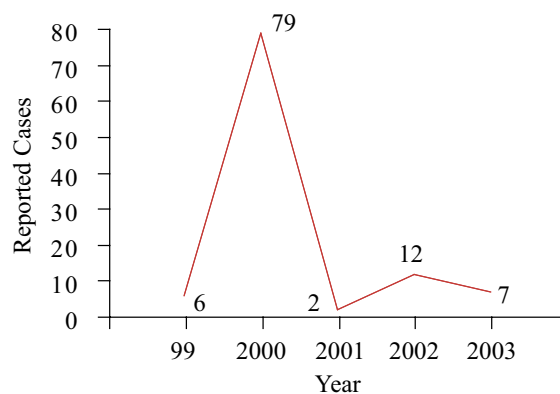


Figure 6 Mumps



Reported Incidence of Selected Communicable Diseases 3rd Quarter (July-Sept), 1999-2003

Figure 7 Viral Hepatitis type A

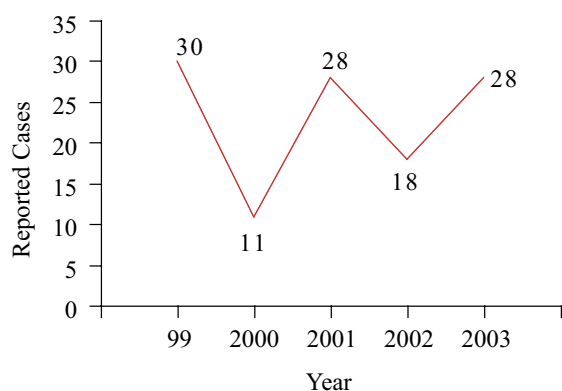


Figure 8 Viral Hepatitis type B

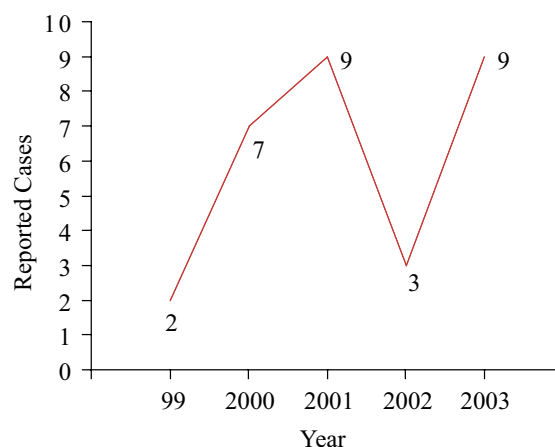


Figure 9 Pulmonary TB

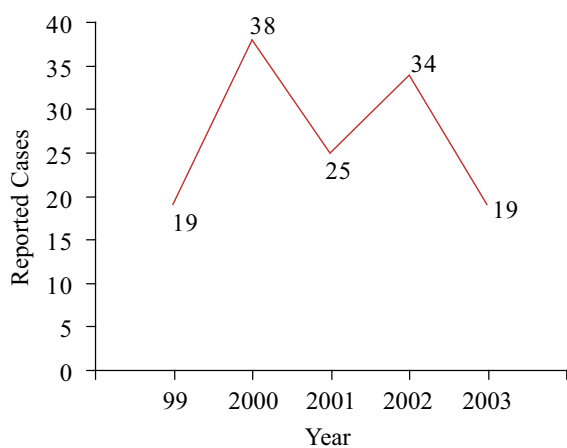


Figure 10 Extra-Pulmonary TB

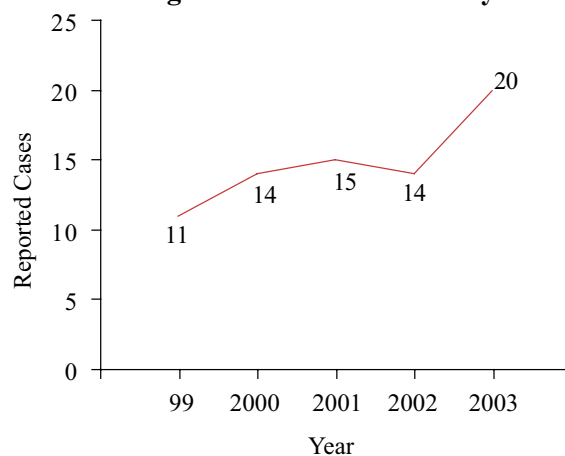


Figure 11 Measles

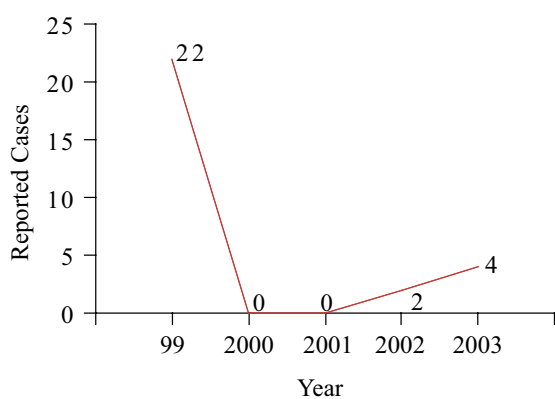
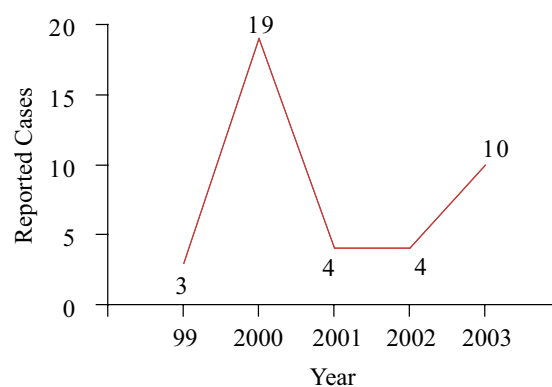


Figure 12 Mumps



REPORT ON A FOOD POISONING OUTBREAK, SITRA, JUNE 2002

Approximately 800 guests attended a wedding party on Thursday June 27, 2002 at the bride's residence in Sitra. On Friday June 28, cases of gastroenteritis began to appear in the Accident and Emergency Department, Salmaniya Medical Complex (SMC).

Between June 28, and July 1, 2003, 618 cases were reported to the SMC. Of the total, 415(67%) were females and 203 (33%) males. 23 patients needed admission into hospital. Information on food histories was collected from 168 ill persons.

Food Items: These were prepared at the M.E Bakery.

The guests were served 3 kinds of sandwiches each containing either egg, cheese or chicken. Mayonnaise was added to the egg and chicken sandwiches. Butter was added to the cheese sandwiches.

107 ill persons had consumed egg as well as cheese sandwiches. 56 ill persons had consumed only egg sandwiches and 5 ill persons had consumed only cheese sandwiches.

M.E. Bakery

The leftover sandwiches were collected and processed for bacteriological examination. The surfaces of the egg slicer was swabbed. The food handlers were submitted to a stool culture examination.

Results of findings : Abdominal pain was the most frequently (85%) reported symptom, followed by diarrhea (84%), (Table 1). The incubation period ranged from 3 hours – 41 hours with a median of 15 hours (Table 2).

Laboratory results

The stool culture results were positive for salmonella enteritidis (Group. D) in 91 patients, and two food handlers. The same organism was isolated from the egg slicer.

Discussion:

From the data that was analysed, it was evident that egg was the suspected food item.

The majority of symptoms were related to the lower gastrointestinal tract viz abdominal pain and diarrhea, and were associated with fever. Since the median incubation period was 15 hours, the illness were most probably due to salmonella infection. This was confirmed by positive stool culture results for enteritidis in 91 ill persons and food handlers. Since the same organism was isolated from the egg slicer, this equipment may have been responsible for transferring the organism to other eggs. Once contaminated the eggs would serve as a good media for the growth of salmonella.

Table 1: Frequency of symptoms

| Symptom | Number of cases | Percent |
|----------------|-----------------|---------|
| | (N:168 cases) | |
| Abdominal Pain | 143 | 85 |
| Diarrhea | 141 | 84 |
| Fever | 117 | 70 |
| Vomiting | 86 | 51 |
| Headache | 63 | 38 |

Table 2: Frequency distribution of incubation periods

| Incubation Period in hours | Number of cases (frequency) | Cumulative frequency |
|----------------------------|-----------------------------|----------------------|
| 3 | 2 | 2 |
| 4 | 4 | 6 |
| 5 | 2 | 8 |
| 6 | 4 | 12 |
| 7 | 10 | 22 |
| 8 | 5 | 27 |
| 9 | 8 | 35 |
| 10 | 10 | 45 |
| 11 | 15 | 60 |
| 12 | 7 | 67 |
| 13 | 5 | 72 |
| 14 | 8 | 80 |
| 15 | 6 | 86 |
| 16 | 10 | 96 |
| 17 | 15 | 111 |
| 18 | 1 | 112 |
| 19 | 6 | 118 |
| 20 | 7 | 125 |
| 21 | 3 | 128 |
| 22 | 6 | 134 |
| 23 | 2 | 136 |
| 24 | 4 | 140 |
| 25 | 2 | 142 |
| 26 | 6 | 148 |
| 28 | 2 | 150 |
| 29 | 1 | 151 |
| 30 | 1 | 152 |
| 31 | 2 | 154 |
| 32 | 1 | 155 |
| 33 | 3 | 158 |
| 34 | 7 | 165 |
| 38 | 2 | 167 |
| 41 | 1 | 168 |

Table 3. Food items consumed by ill persons

| Food item | Number of ill persons who ate |
|----------------------------------|-------------------------------|
| Egg Sandwich | 56 |
| Egg Sandwich and Cheese Sandwich | 107 |
| Cheese Sandwich | 5 |
| Total | 168 |

SITUATION OF MALARIA IN BAHRAIN

Bahrain continues to be free of malaria transmission since 1979. There is always a threat of indigenous malaria returning to Bahrain. This is evident from the large number of expatriates from developing countries where malaria is endemic, who return to Bahrain annually. The unexpected changes in climatic conditions that bring in heavy rains with pools of stagnant water in various locations in Bahrain (as experienced in 1995) and causing an increase in the mosquito population. These are some of the conditions that could lead to the resurgence and establishment of malaria in Bahrain.

The main objective of malaria control activities is to prevent the resurgence and reestablishment of malaria in Bahrain through improving the preventive measures, ensuring reporting and management of cases.

During the period, 1990-2002 a total of 2043 cases were reported. Of the total, 1756 (86%) were due to *P.vivax* and 287 (14%) due to *P.falciparum*. The vast majority of cases were imported from India and Pakistan.

Figure 13 : Trends of Malaria Incidence, 1990 - 2002

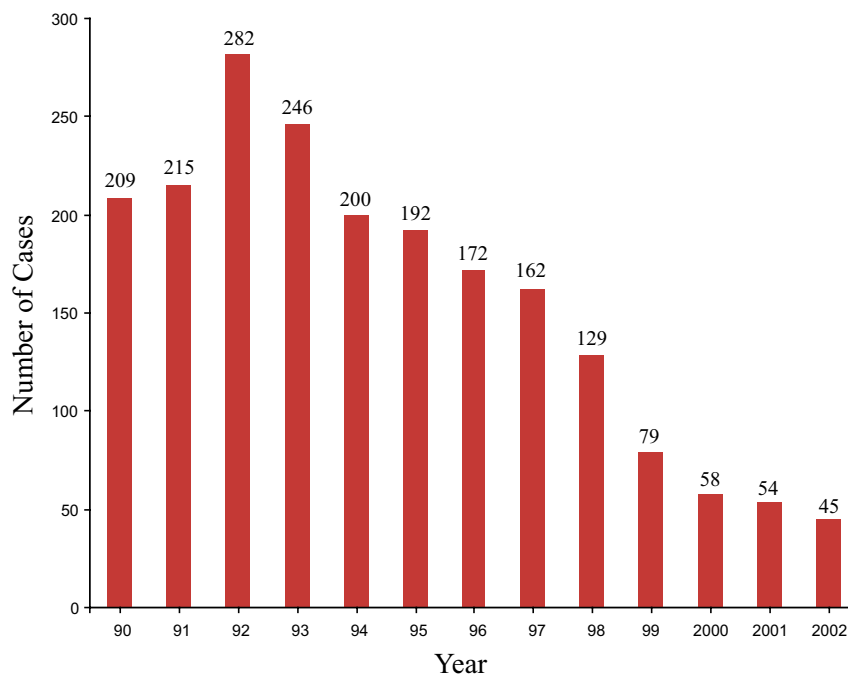


Table 4: Reported cases of notifiable diseases by four week period - Bahrain, 23.3.2003 - 6.9.2003

| Diseases | WK 13-16 | WK 17-20 | Wk 21-24 | WK 25-28 | WK 29-32 | WK 33-36 | Total |
|---------------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------|
| | 23.3.03 19.4.03 | 20.4.03 17.5.03 | 18.5.03 14.6.03 | 15.6.03 12.7.03 | 13.7.03 9.8.03 | 10.8.03 6.9.03 | |
| Typhoid Fever | 0 | 1 | 1 | 1 | 0 | 4 | 7 |
| Paratyphoid Fever | 0 | 1 | 2 | 0 | 0 | 1 | 4 |
| Other Salmonella Inf. | 10 | 15 | 28 | 29 | 34 | 36 | 152 |
| Shigellosis | 15 | 5 | 7 | 8 | 6 | 10 | 51 |
| Amoebiasis | 3 | 0 | 1 | 0 | 2 | 1 | 7 |
| Viral Hepatitis Total | 22 | 21 | 14 | 19 | 12 | 14 | 102 |
| Type A | 20 | 20 | 12 | 10 | 8 | 10 | 80 |
| Type B | 1 | 0 | 0 | 4 | 2 | 3 | 10 |
| Type C | 1 | 1 | 0 | 3 | 2 | 0 | 7 |
| Type E | 0 | 0 | 2 | 2 | 0 | 1 | 5 |
| Tuberculosis Resp. Sys. | 20 | 14 | 10 | 7 | 5 | 7 | 63 |
| Tuberculosis Other Forms | 10 | 11 | 4 | 12 | 7 | 1 | 45 |
| Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Whooping Cough | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tetanus | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leprosy | 2 | 1 | 2 | 3 | 1 | 0 | 9 |
| Streptococcal Sore Throat | 20 | 24 | 121 | 112 | 68 | 28 | 373 |
| Meningococcal Meningitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Meningitis | 6 | 9 | 3 | 3 | 2 | 2 | 25 |
| Syphilis | 22 | 50 | 16 | 13 | 35 | 30 | 166 |
| Gonococcal Infection | 41 | 43 | 55 | 51 | 57 | 20 | 267 |
| Other urethritis | 9 | 10 | 60 | 41 | 20 | 12 | 152 |
| Other STD's | 50 | 40 | 37 | 64 | 71 | 30 | 292 |
| Chickenpox | 324 | 370 | 329 | 281 | 169 | 92 | 1565 |
| Measles | 2 | 2 | 2 | 3 | 0 | 1 | 10 |
| Rubella | 0 | 0 | 2 | 2 | 0 | 0 | 4 |
| Mumps | 0 | 4 | 3 | 2 | 5 | 3 | 17 |
| Malaria P.Vivax | 3 | 0 | 9 | 4 | 3 | 0 | 19 |
| Malaria P.Falciparum | 0 | 0 | 2 | 1 | 0 | 0 | 3 |

Table 5: Reported incidence rates of notifiable diseases by four week period - Bahrain, 23.3.2003 - 6.9.2003

| Diseases | WK 13-16 | WK 17-20 | Wk 21-24 | WK 25-28 | WK 29-32 | WK 33-36 | Total |
|---------------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------|
| | 23.3.03 19.4.03 | 20.4.03 17.5.03 | 18.5.03 14.6.03 | 15.6.03 12.7.03 | 13.7.03 9.8.03 | 10.8.03 6.9.03 | |
| Typhoid Fever | 0 | 0.2 | 0.2 | 0.2 | 0 | 0.6 | 1.2 |
| Paratyphoid Fever | 0 | 0.2 | 0.3 | 0 | 0 | 0.2 | 0.7 |
| Other Salmonella Inf. | 1.5 | 2.3 | 4.3 | 4.4 | 5.2 | 5.5 | 23.2 |
| Shigellosis | 2.3 | 0.8 | 1.1 | 1.2 | 0.9 | 1.5 | 7.8 |
| Amoebiasis | 0.5 | 0 | 0.2 | 0 | 0.3 | 0.2 | 1.2 |
| Viral Hepatitis Total | 3.4 | 3.2 | 2.1 | 2.9 | 1.8 | 2.1 | 15.5 |
| Type A | 3.1 | 3.1 | 1.8 | 1.5 | 1.2 | 1.5 | 12.2 |
| Type B | 0.2 | 0 | 0 | 0.6 | 0.3 | 0.5 | 1.6 |
| Type C | 0.2 | 0.2 | 0 | 0.5 | 0.3 | 0 | 1.2 |
| Type E | 0 | 0 | 0.3 | 0.3 | 0 | 0.2 | 0.8 |
| Tuberculosis Resp. Sys. | 3.1 | 2.1 | 1.5 | 1.1 | 0.8 | 1.1 | 9.7 |
| Tuberculosis Other Forms | 1.5 | 1.7 | 0.6 | 1.8 | 1.1 | 0.2 | 6.9 |
| Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Whooping Cough | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tetanus | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leprosy | 0.3 | 0.2 | 0.3 | 0.5 | 0.2 | 0 | 1.5 |
| Streptococcal Sore Throat | 3.1 | 3.7 | 18.5 | 17.1 | 10.4 | 4.3 | 57.1 |
| Meningococcal Meningitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Meningitis | 0.9 | 1.4 | 0.5 | 0.5 | 0.3 | 0.3 | 3.9 |
| Syphilis | 3.4 | 7.6 | 2.4 | 2.0 | 5.3 | 4.6 | 25.3 |
| Gonococcal Infection | 6.3 | 6.6 | 8.4 | 7.8 | 8.7 | 3.1 | 40.9 |
| Other urethritis | 1.4 | 1.5 | 9.2 | 6.3 | 3.1 | 1.8 | 23.3 |
| Other STD's | 7.6 | 6.1 | 5.7 | 9.8 | 10.8 | 4.6 | 44.6 |
| Chickenpox | 49.5 | 56.5 | 50.3 | 42.9 | 25.8 | 14.1 | 239.1 |
| Measles | 0.3 | 0.3 | 0.3 | 0.5 | 0 | 0.2 | 1.6 |
| Rubella | 0 | 0 | 0.3 | 0.3 | 0 | 0 | 0.6 |
| Mumps | 0 | 0.6 | 0.5 | 0.3 | 0.8 | 0.5 | 2.7 |
| Malaria P.Vivax | 0.5 | 0 | 1.4 | 0.6 | 0.5 | 0 | 3 |
| Malaria P.Falciparum | 0 | 0 | 0.3 | 0.2 | 0 | 0 | 0.5 |

HIV / AIDS

Since 1987, when the first case of HIV infection was reported, new cases continue to accumulate.

From 1987 through 2003, a total of 135 HIV positives, and 114 AIDS cases among Bahrainis were reported.

The vast majority of AIDS cases were in the 20-44 years age group. Males accounted for 88%, and females accounted for 12% of the cases.

Intravenous drug use was the most important mode of transmission (65%), followed by heterosexual transmission (19%), blood transmission (9%), homosexual transmission (4%), and mother to child (3%).

Figure 14 : Number of AIDS cases among Bahraini 1987 - 2003

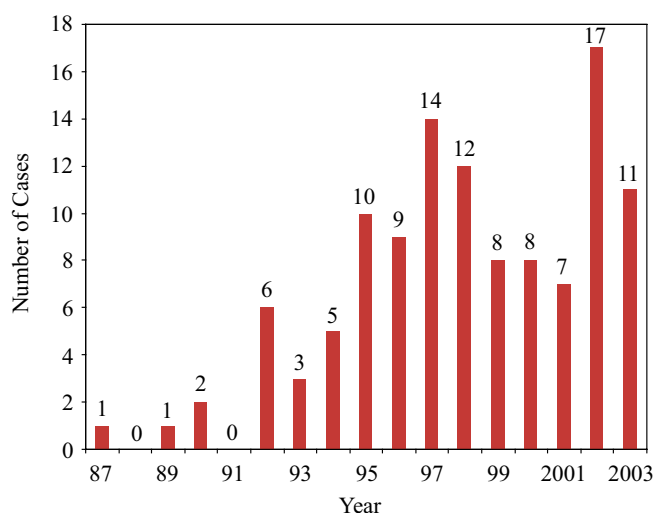


Table 6 : Number of cases of AIDS/ARC/HIV among Bahrainis, 1987-2003

| Number of AIDS cases | | A symptomatic HIV | | Total | |
|----------------------|-------|-------------------|-------|-------|-------|
| Dead | Alive | Dead | Alive | Dead | Alive |
| 94 | 20 | 33 | 102 | 127 | 122 |

Table 7 : AIDS cases among Bahrainis by Age & Sex

| Age | Total | | |
|--------------|------------|-----------|------------|
| | Male | Female | Total* |
| 0 - 4 | 2 | 2 | 4 |
| 5 - 9 | 0 | 0 | 0 |
| 10 - 14 | 1 | 1 | 2 |
| 15 - 19 | 1 | 0 | 1 |
| 20 - 24 | 25 | 0 | 25 |
| 25 - 29 | 20 | 1 | 21 |
| 30 - 34 | 19 | 3 | 22 |
| 35 - 39 | 13 | 1 | 14 |
| 40 - 44 | 9 | 2 | 11 |
| 45 - 49 | 1 | 1 | 2 |
| 50 - 54 | 4 | 0 | 4 |
| 55 - 59 | 1 | 1 | 2 |
| 60 + | 5 | 1 | 6 |
| Total | 101 | 13 | 114 |

* Of the total, 87 have died and 22 are living

Table 8 : AIDS cases among Bahrainis by Mode of Transmission

| Mode of Transmission | Number of Cases |
|-----------------------|-----------------|
| Heterosexual | 22 |
| Homosexual | 4 |
| Blood/Blood Products | 10 |
| Injecting Drug use | 74 |
| Mother to Infant | 3 |
| Other known (specify) | 0 |
| Multiple | 1 |
| Unknown | 0 |
| Total | 114 |

STRENGTHENING IMMUNIZATION SAFETY

World Health Organization conducted an inter country workshop on Immunization Safety in Cairo, Egypt during 14-16 December 2003. The objectives of the workshop were to review the current situation of immunization safety in the EMR countries, to develop / update the national plans for improving immunization

safety, and to discuss the strategic approaches for developing / improving national infection control programs.

This workshop was part of efforts by WHO to improve safety of injection / infection control, and to ensure proper waste management.