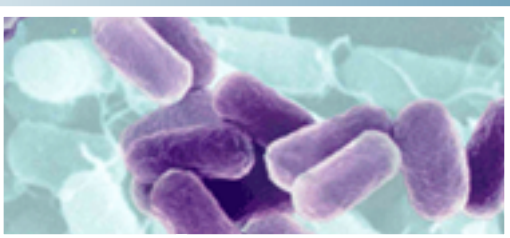

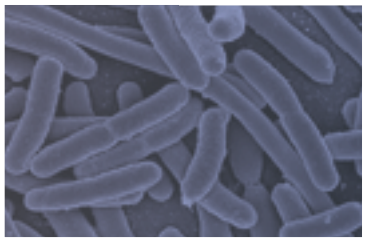

Disease Surveillance Unit

Annual Report

2004

2004

Disease Surveillance Unit

Annual Report

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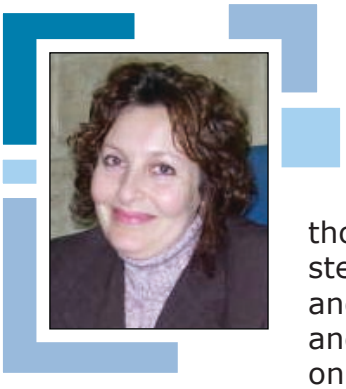
Contents

Introduction



This is the fourth published annual report of the *Disease Surveillance Unit* (*DSU*). The unit is responsible for the surveillance, prevention and control of communicable diseases in Malta. Communicable diseases still occur frequently throughout the world and constant vigilance is required to prevent the re-appearance of diseases that were once thought to have been conquered. Since surveillance is the first step towards prevention, the main aim of the *DSU* is to prevent and control communicable diseases so as to reduce the incidence and hence the burden caused by these diseases. The unit depends on medical practitioners and medical diagnostic laboratories for information on the incidence of communicable diseases and hence notification is vital in efforts to prevent or control the spread of infection. Therefore, the unit encourages health care service providers and laboratories to notify cases they encounter during their daily professional activities, so that the quality of surveillance data is enhanced.

The report is aimed at anyone with an interest in communicable diseases. It will be very relevant to health service providers and researchers in the field of communicable diseases. It will also provide interesting and essential information to medical practitioners involved in direct contact with patients who may present with a communicable disease.

This report builds on work covered in previous reports, starting with a brief description of the role of the *DSU* followed by epidemiological reports on various communicable diseases reported in 2004. Available in this issue is information on leptospirosis, a disease which is not common in Malta, but the outcome of which can lead to fatalities. Also included is a report on tuberculosis, which is becoming an increasing burden due to the influx of persons coming from countries where the disease is endemic.

The staff at the *DSU* would like to express their appreciation to all those who have submitted reports of notifiable infectious diseases and to the staff of the *Public Health Laboratory* and the *Microbiology* and *Virology Laboratories* at *St. Luke's Hospital* and private laboratories for their hard work and invaluable collaboration.

This report reflects the combined input from all the staff at *DSU*. I would like to thank all of the staff who have worked and are working at the *DSU*, who are committed and show dedication to their work and without whom the activities carried out by the unit would not have been feasible.

Dr. Charmaine Gauci
Editor

The Disease Surveillance Unit

History

The *Disease Surveillance Unit* of the *Department of Public Health* is the national surveillance centre for communicable diseases in Malta. The Unit was set up in 1990 and was originally part of the then *Health Services Information Unit*. The main aim was to co-ordinate and develop further the surveillance system of notifiable infectious diseases.

In 1993, the Unit became incorporated within the newly established *Department of Public Health* where it also became responsible for the control and prevention of communicable diseases in Malta.

Surveillance

Communicable disease surveillance is the continuous monitoring of the frequency and the distribution of disease and deaths due to infections that can be tnansmitted from human to human or from animals, food, water or the environment to humans, and the monitoring of risk factrors for these infections. Surveillance tells us which infections are the most important causes of illness, disability and death, so that decisions can be taken for prioritising prevention and control strategies.

Another important purpose of communicable disease surveillance is the detection of outbreaks so that immediate action can be taken to identify and contain the source. By monitoring how the number of cases of an infection change over time, we can assess whether control and prevention activities, such as vaccination programmes, are being effective in reducing the frequency of disease and its consequences.

Sixty-seven specified communicable diseases are statutory notifiable, including priority communicable diseases as well as syndromes and health conditions such as congenital rubella, acute flaccid paralysis and anti-microbial resistance. Notification is mandatory by law for all doctors in both public and private sectors. In terms of Article 27 (a) (i) of the Public Health Act, the Superintendent of Public Health has declared the list of notifiable diseases. This notice was issued in the Government Gazette of the 27th January 2004. Since January 2004 the list of notifiable conditions includes HIV, Severe Acute Respiratory Syndrome (SARS) and anti-microbial resistance.

Details of patients and disease are sent via the **Infectious Disease Certificate** (see *Appendix 1*) by mail or fax to the *Disease Surveillance Unit* on behalf of the Superintendent of Public Health. Notifications may also be received via *Synapse Direct*, which is a secure on-line system (for more information go to ***www.thesynapse.net***). For urgent notifications, a 24-hour on-call service operates via the *St. Luke's Hospital* switchboard (***Tel: 21241251***).

Objectives

- To undertake surveillance of communicable diseases in Malta
- To improve reporting of notifiable diseases by creating methods that would encourage early notification
- To disseminate relevant, accurate and timely information
- To undertake responsibility for the control of infection through timely investigation and management of incidents of communicable diseases
- To undertake epidemiological research
- To provide advice on communicable diseases to health professionals and the general public
- To contribute to training in commuicable disease control

Medical doctors are continually encouraged to notify communicable diseases since the system relies substantially on such notifications. A copy of the latest notification form is available as *Appendix 1* together with information on how to obtain further copies.

A supplementary system of reporting key infections also operates from the laboratories of the *Department of Pathology* at *St. Luke's Hospital* and private medical diagnostic laboratories. The laboratories on the island serve to detect infections at a primary level. For any further investigations and confirmatory tests, clinical samples are occasionally sent to reference laboratories overseas.

Reports of deaths directly attributed to notifiable infectious diseases are provided by the *Department of Health Information*, which processes all death certificates. This constitutes another source of notifications.

Analysis of Data

Data on reported communicable disease are entered on a database and analysed. Analysis is done using **EPI-Info** and **SPSS software**.

Control and Prevention

Medical officers of the *Disease Surveillance Unit* investigate all reported cases. Any necessary environmental action is co-ordinated through health inspectors within the *Health Inspectorate*. This mostly involves the *Food Safety Unit* and the *Environment Health Unit*. The *Chest Unit* is responsible for data collection in cases of tuberculosis. It also carries out public health preventive measures related to tuberculosis, including screening.

Management of Outbreaks

Reports of outbreaks are forwarded to the *Disease Surveillance Unit*. Outbreak control teams are set up to investigate and follow up outbreaks for timely control measures to be taken. Reports are usually collated at central level.

Follow-up is done by the *Disease Surveillance Unit* officials. Most investigations deal

with outbreaks of food-borne disease, particulary *Salmonella*, *Campylobacter*, toxic and other unspecified bacterial and viral causes of diarrhoea.

Dissemination of Data

Reports on notified and confirmed cases are issued on a weekly and monthly basis respectively. Annual tabulated reports of confirmed cases are also issued by the *DSU*. Data is also sent to health authorities of neighbouring countries, the *WHO European Regional Office* and the *Istituto Superiore di Sanità* in Rome, Italy.

The WHO and its collaborating centres are regularly provided with requested data on specific infectious diseases such as HIV/AIDS, tuberculosis, rabies and malaria.

Data is also available on the *Disease Surveillance Unit* web site. The recently revamped web site contains information about the commoner infectious diseases (the A to Z of Infectious Diseases). This part of the site is updated regularly with the latest information. It explains the signs, symptoms, modes of transmission, treatment and prevention of these diseases. The site also contains reports, statistics and the various publications that the Unit has issued. It is linked to related health organisations in other countries and various sources of information on infectious diseases. The web site is available at ***www.health.gov.mt/dsu***.

International Collaboration

The *Disease Surveillance Unit* collaborates with European communicable disease-specific networks and other programmes on surveillance and control as follows:

- **BSN** — Basic Surveillance Network
- **CCASHH** — European Project on Food and Water-borne Disease
- **CCE Baltics Network** — Measles Surveillance
- **EISS** — European Influenza Surveillance Scheme
- **ENTERNET** — *Salmonella*, *Campylobacter*, *EHEC* Surveillance
- **EPIET** — European Programme for Intervention Epidemiology Training
- **EPISouth**
- **ESSTI** — Surveillance of Sexually Transmitted Infections in Europe
- **EU IBIS** — Invasive Bacteria Surveillance
- **EuroHIV** — European Centre for the Epidemiological Monitoring of AIDS
- **EuroHEP.NET** — Feasibility Study for a Future European Network Surveillance Vaccine-Preventable Hepatitis
- **EuroTB** — Surveillance of Tuberculosis in Europe
- **EUVAC.Net** — European Union Vaccine-Preventable Diseases Project
- **EWGLI** — European Working Group for Legionella Infections
- **IRIDE** — Inventory of Resources for Infectious Diseases in Europe
- **WHO Global Eradication of Poliomyelitis**
- **WHO Measles Surveillance in European Region**
- **WHO Surveillance Programme for Control of Food-borne Infections and Intoxications in Europe**

Information on surveillance, reported cases and outbreaks and control is shared with these networks.

The *Disease Surveillance Unit* is committed towards creating a relationship with the doctor. Feedback is given by regular publication of disease trends. Doctors who notify are also informed about the investigation and outcome of their notification. The unit is also available for information and advice on communicable diseases to the general public (including advice on travel health) and health-care professionals.

Surveillance Reports on Selected Communicable Diseases

Acute Flaccid Paralysis

Active surveillance of acute flaccid paralysis continued throughout this year with monthly reporting to the *WHO*. Active surveillance looks for cases up to 15 years of age. There was one case of acute flaccid paralysis in a person aged more than 15 years.

AIDS and HIV

In Malta, between 1986 and 2004, there were 58 reported cases of AIDS in Maltese residents, of which 50 (86.2%) are known to be dead (see *Table 1*). The reported incidence and death rates have fallen in recent years since a significant number of cases in the beginning of the epidemic were haemophiliacs who had received contaminated blood products (*Figure 1*). Screening of blood and blood products is now a routine practice and hence there have been no further cases of AIDS associated with blood transfusions in Malta.

***Figure 1*. Incidence rate of AIDS in Maltese residents (1990 - 2004)**

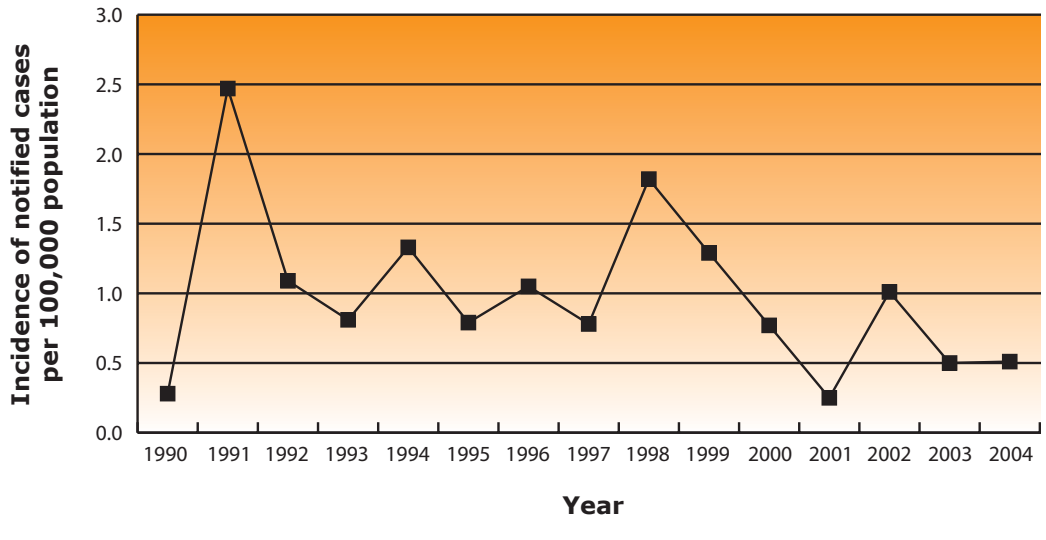


Table 1. **Number of notified cases and deaths due to AIDS in Maltese residents (1986 - 2004)**

Year	Mid-Year Population	Notifications	Deaths
1986	348,372	5	4
1987	350,914	2	2
1988	354,532	7	4
1989	358,188	0	1
1990	360,048	1	2
1991	363,844	7	3
1992	367,618	4	5
1993	371,308	3	3
1994	374,797	5	4
1995	377,418	3	1
1996	379,904	4	8
1997	382,790	2	2
1998	385,286	4	3
1999	387,578	1	1
2000	390,087	3	2
2001	393,028	0	0
2002	395,968	4	2
2003	397,971	2	1
2004	389,653	1	1
Unknown		0	1
□□□□□		**58**	**50**

There were two cases of AIDS. One case was a Maltese resident who died as a consequence of the disease and the other case was a non-Maltese resident.

By the end of 2003 there were 210 positive HIV tests to have ever been reported in Malta. Since the 27th January 2004, HIV became a statutory notifiable disease. There were subsequently 15 reported cases during 2004. Nine of these occurred in Maltese residents (of which three were foreigners) and six in non-residents. A person with HIV infection can appear perfectly healthy for many years following exposure to the virus and, during this time, can infect other people. The principal ways in which HIV is known to be transmitted are through sexual intercourse with an infected person without a condom, sharing of drug-injecting equipment and from an HIV-infected mother to her child around the time of birth. In Malta the main mode of transmission is sexual (see *Table 2*).

Table 2. **Reported cases of AIDS by transmission category (1985 - 2004)**

Transmission Category	Persons
Homosexual / bisexual men	31
Haemophiliacs / coagulation disorders	13
Heterosexual contact	8
Homosexual / bisexual contact	1
Mother to child (abroad)	1
Injecting drug users	0
Other / undetermined	4
□□□□□	**58**

Bacterial Meningitis (other than meningococcal)

There were 16 cases of other bacterial meningitis. Two of these occurred in non-residents. Of these, seven cases were caused by *Streptococcus pneumoniae* and four cases were *Haemophilus influenzae type B* meningitis. One of these cases passed away as a consequence of the disease.

Food-borne Diseases

For the majority of the sporadic cases of food-borne illness, the aetiological agent remained unknown (unspecified). Of these unspecified food-borne illnesses, there were 141 individual cases (11 in non-residents) and 54 separate outbreaks affecting a total of 213 cases (25 in non-residents).

- ***Salmonellosis*** affected 52 individual cases (five in non-residents) and nine separate outbreaks involved a total of 26 persons (two in non-residents).

- ***Campylobacter enteritis*** affected 67 individual cases (three in non-residents) and 14 separate outbreaks affected 30 cases (two in non-residents). In previous years, the number of cases of Salmonellosis was higher than that for *Campylobacter*. The higher incidence of *Campylobacter* in 2004 correlates with the picture seen in other European countries.

- ***E. coli*** affected six individual cases, two of which were *E. coli O157*.

- ***Scombrotoxic food poisoning*** affected four individual cases and two outbreaks affecting six cases.

- ***Shigella*** affected one individual case which was imported and an outbreak of two cases.

- ***Giardiasis*** affected four cases, three of which were imported.

- ***Cryptosporidiosis*** affected seven cases, one of which was imported.

Overall trends in food-borne illness are shown in *Figure 2*.

***Figure 2*. Trends in reported sporadic food-borne illness (1992 - 2004)**

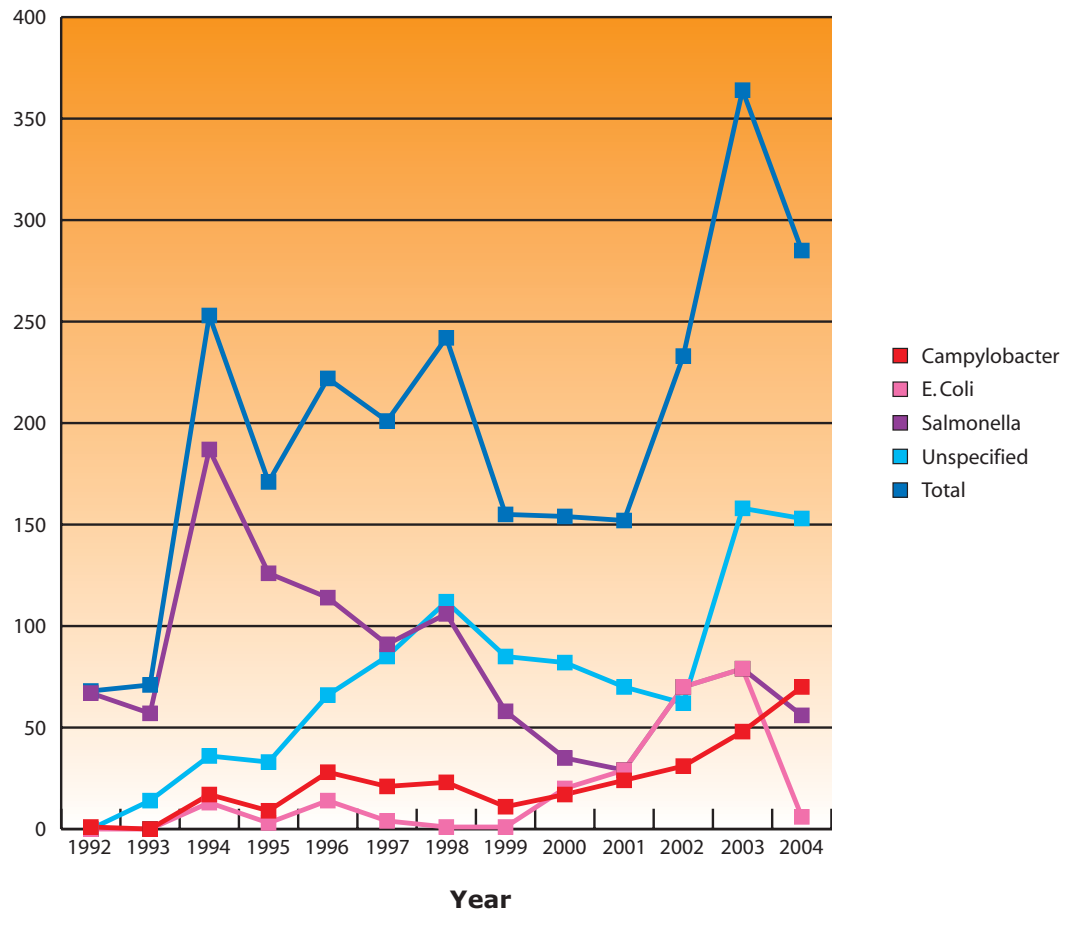
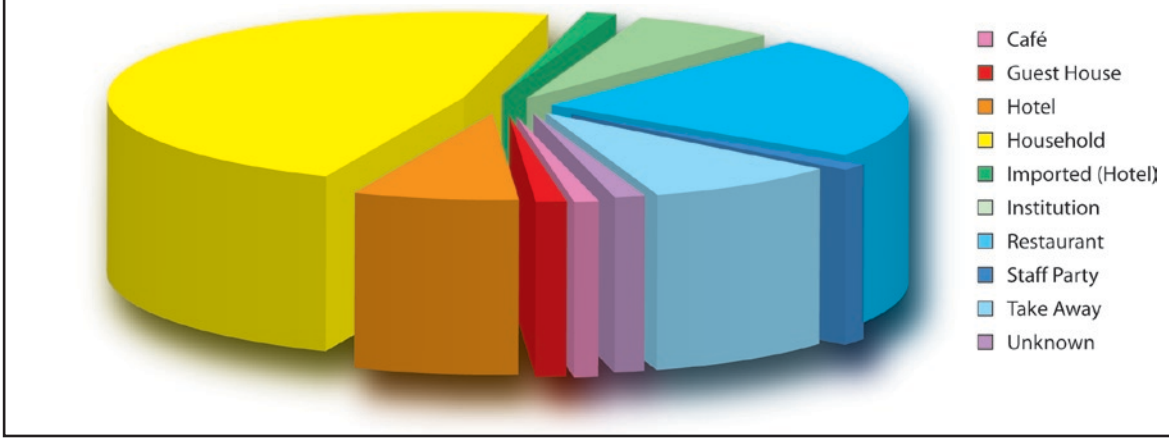


Figure 3. **Sources of food-borne illness outbreak cases in 2004**



Outbreaks of Food-borne Illness

The majority of outbreaks during the year, 48%, originated from households. Restaurants accounted for 23% of the outbreaks, take-away for 9%, hotels for 7%, whilst respite homes/hospitals accounted for 6% of the outbreaks (see *Figure 3*).

Hepatitis

There were seven cases of Hepatitis B in Maltese residents (two cases pending) and one case in a non-resident. The overall trend of Hepatitis B and C is on the decline (see *Figures 4* and *5*). There were no cases of Hepatitis A during the year.

Legionnaire's Disease

During 2004 there were 14 reported cases of Legionnaire's disease that were diagnosed and confirmed using urinary antigen testing. One of the cases was a sporadic case

Figure 4. **Reported incidence of sporadic acute hepatitis B cases (1990 - 2004)**

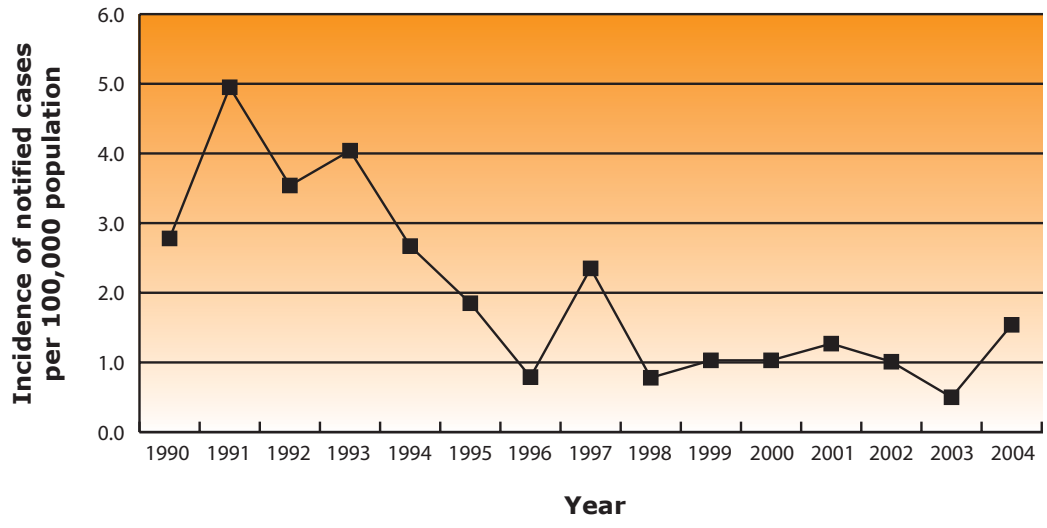
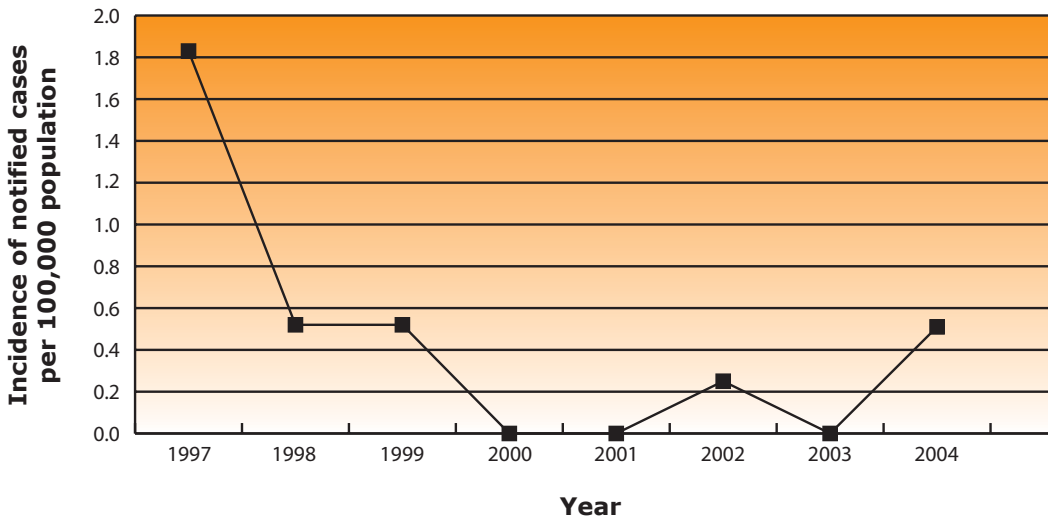


Figure 5. **Reported incidence of sporadic acute hepatitis C cases (1997 - 2004)**

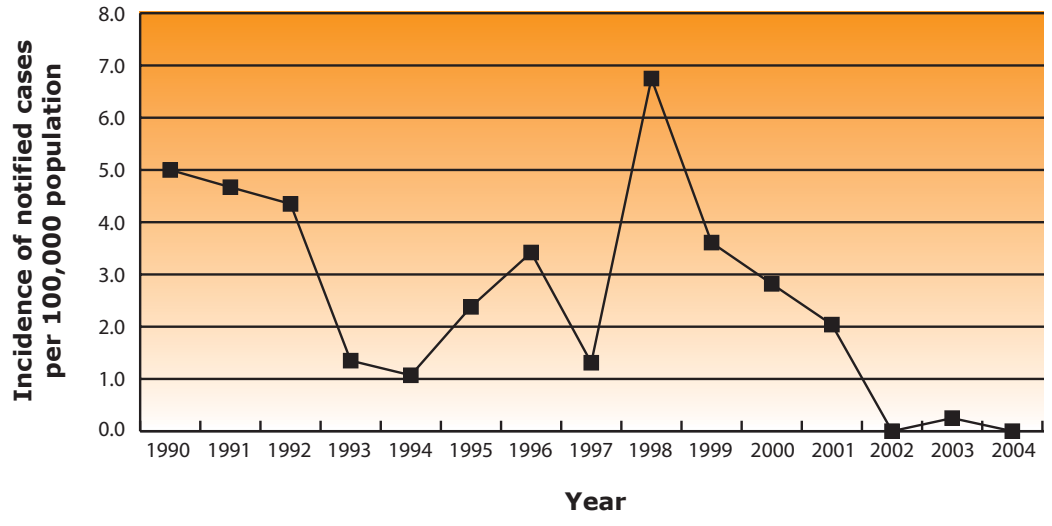


which occurred in a Maltese resident. The other cases were reported from the *European Working Group on Legionella Infections* regarding tourists who acquired the disease during their stay in Malta. Of these cases, three were single cases, while there were three clusters of two cases and one cluster of four cases. Of the cases in non-residents, two died as a consequence of the disease.

Leishmaniasis

- ***Cutaneous Leishmaniasis***. Over recent years, the reported incidence of cutaneous leishmaniasis fluctuated, peaking in 1998 when 26 cases were reported, constituting an incidence of 6.89 x 10^{-8} per 1,000 population (see *Figure 6*). Of these, 13 cases originated in Gozo despite the small population (30,567 in Gozo versus 358,300 in Malta). After this time the reported incidence declined. There were no notified cases of cutaneous leishmaniasis in 2004.

Figure 6. **Reported incidence of sporadic cutaneous leishmaniasis cases (1990 - 2004)**

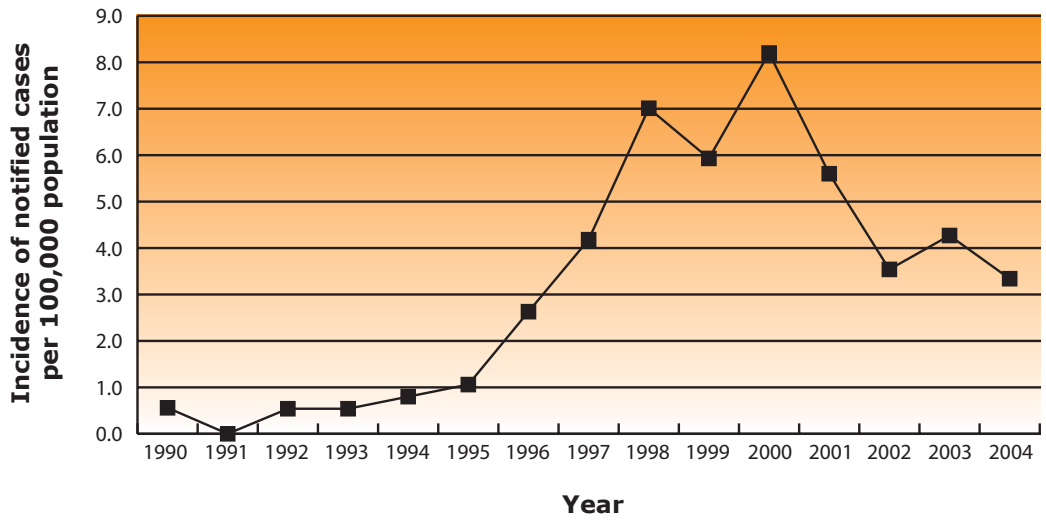


- ***Visceral Leishmaniasis***. The reported incidence rate of notified cases of visceral leishmaniasis has been low over the past 10 years. There were four cases of visceral leishmaniasis in 2004.

Meningococcal Disease

The reported incidence rate dropped after the year 2000 to reach a rate of 3.5 per 100,000 in 2002. During 2004, the reported rate was 3.33 per 100,000 (see *Figure 7*). Of the 13 cases which occurred in this year, the main clinical diagnosis in two cases was meningitis. Septicaemia alone was reported in nine cases while two cases had both meningitis and septicaemia.

***Figure 7*. Reported incidence of sporadic meningococcal disease cases (1990 - 2004)**



Of the 13 notified cases, *Neisseria meningitidis* was cultured in seven cases (53%). Information on serogroup, type and subtype was available in all of these seven cases. Of these serogoupable cases, *serogroup B* accounted for six cases (85.71%) and *serogroup A* for one case (14.29%). There were no cases of *serogroup C*, *W-135* or *D*.

Although the reported incidence rate declined between 2000 and 2002, the case fatality rate remained substantial during 2002, when there were three deaths directly caused by meningococcal disease, with an overall case fatality rate of 21.43% — higher than the average rate of 7-10% in other developed countries. This increased again to 23% (three deaths) in 2004 (see *Table 3*).

***Table 3*. Case fatality rate from meningococcal disease (1997 - 2004)**

Year	No. of Cases	No. of Deaths	Case Fatality Rate
1997 — 1998	45	8	19.4%
1999 — 2000	55	8	15.6%
2001 — 2002	36	4	13%
2003	17	0	0%
2004	13	2	23.1%

Sentinel Surveillance

In 2004, 25 GPs were participating in sentinel surveillance of influenza. The sentinel surveillance this year has been extended to include syndromic surveillance of STIs, vaccine-preventable diseases (measles, mumps, pertussis and rubella) and infectious intestinal illness.

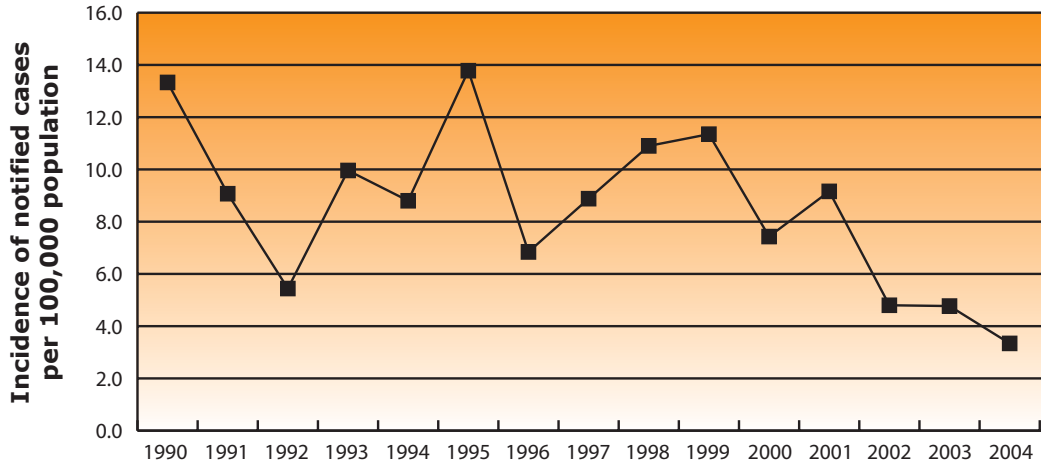
Sexually Transmitted Infections

Since 27th January 2004 STIs were made statutory notifiable. There were six notified cases of *Chlamydia*, six cases of gonorrhoea, one case of *Herpes simplex*, one case of syphilis and one case of latent syphilis.

Typhus

The commonest form of typhus fever encountered in Malta is the murine type followed by the tick-borne type. The number of reported cases of murine typhus is slowly on the decline. The tick-borne typhus cases reported have been on the decline since 1998 when surveillance for this condition was enhanced (see *Figures 8 and 9*). During 2004, there were 13 reported cases of murine typhus and five cases of tick-borne typhus and a cluster of two cases of tick-borne typhus.

***Figure 8*. Reported incidence of sporadic murine typhus cases (1990 - 2004)**

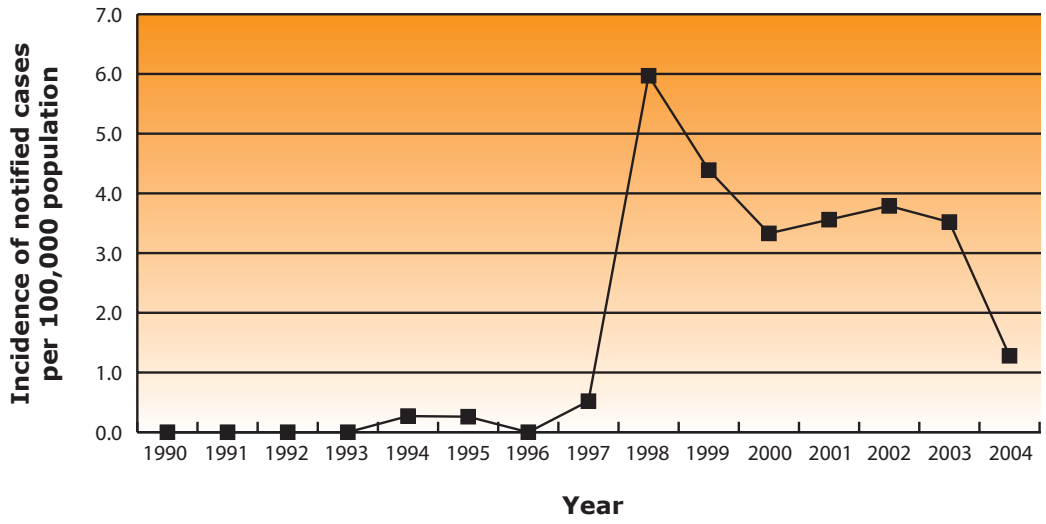


Tuberculosis (TB)

There were 23 TB cases notified in the year 2004. These were divided into:

- Six pulmonary TB cases in Maltese nationals,
- Eleven pulmonary TB cases in foreigners,
- Three extra-pulmonary TB cases in Maltese nationals,
- Three extra-pulmonary TB cases in foreigners.

Figure 9. Reported incidence of sporadic tick-borne typhus cases (1990 - 2004)



Leptospirosis

There were three cases of leptospirosis notified during the year, one of which passed away.

Vaccine-Preventable Diseases

There were five cases of measles (one of which is still pending). One of these cases was laboratory confirmed whilst the others were based on clinical diagnosis. There were seven cases of mumps and no confirmed cases of rubella. Six cases of pertussis were reported. Two of these were laboratory confirmed and the others were based on clinical diagnosis.

There were 565 cases of chickenpox notified to the unit. Four of these occurred in non-residents. This included 68 clusters of two cases, 37 clusters of three cases, twelve clusters of four cases, five clusters of five cases each, one cluster of six cases, one cluster of seven cases and one cluster of nine cases. One of the Maltese residents passed away as a consequence of the disease. There were 27 cases of Herpes zoster reported.

Tuberculosis

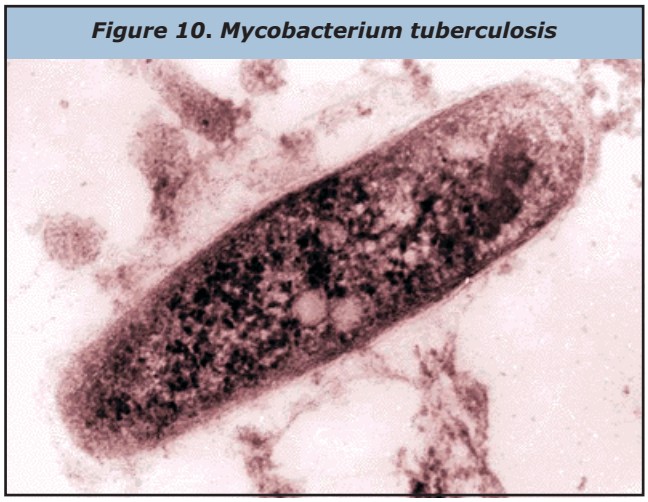


Figure 10. Mycobacterium tuberculosis

Tuberculosis (TB) is a contagious disease caused by *Mycobacterium tuberculosis* complex. This complex includes *M. tuberculosis* (see *Figure 10*) and *M. africanum*, primarily from humans and *M. bovis* primarily from cattle.

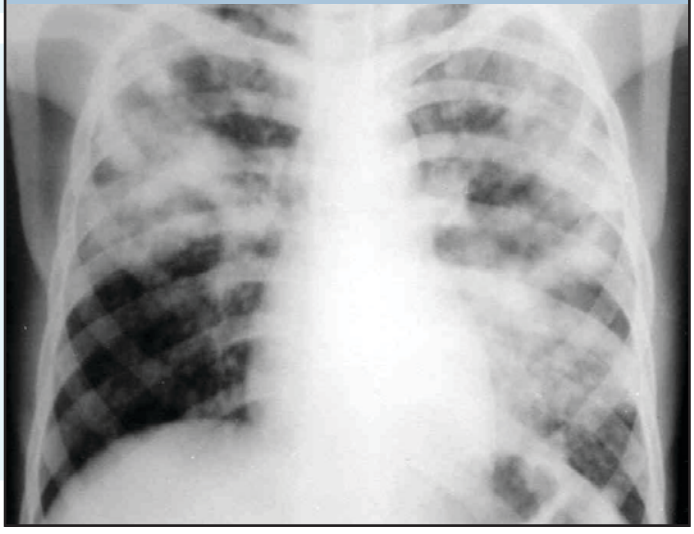
Infection and Transmission

Tuberculosis is transmitted by exposure to tubercle bacilli in airborne droplet nuclei produced by people with active pulmonary or laryngeal TB during expiratory efforts such as coughing, sneezing, singing or spitting. A person who inhales these bacilli can be infected. It usually requires prolonged close contact with someone with the infectious TB disease to get infected. People with TB infection will not necessarily get sick. The immune system walls off the bacilli, which can lie dormant for years. About 5-10% of those who are infected develop TB disease. When someone's immune system is weakened, as happens with conditions like cancer, diabetes and AIDS, the chances of getting sick are greater. If left untreated one person with active TB disease will infect on average 10 to 15 people every year.

Symptoms

TB can affect any part of the body but the lung (pulmonary TB — *Figure 11*) is the most commonly affected site. The symptoms of pulmonary TB usually include persistent cough for more than three weeks, haemoptysis, low grade fever, night sweats, loss of appetite, weight loss, fatigue and chest pain. TB can also affect other organs (extra-pulmonary TB) and will cause symptoms according to the organ it affects, for example swelling of lymph nodes (tuberculous lymphadenitis), inflammation in the bones (tuberculous osteomyelitis), etc.

Figure 11. **Chest X-ray appearance of pulmonary TB**



Incubation Period

The incubation period from infection to a demonstrable primary lesion or significant reaction to the tuberculin skin test (Mantoux test), is about 4-12 weeks. The subsequent risk of developing pulmonary or extra-pulmonary disease is greatest within the first year or two after infection but will persist for a lifetime.

Epidemiology

Global Epidemiology

In 1993 the *World Health Organisation* (*WHO*) took an unprecedented step and declared TB a global emergency. Low priority given by government, inadequate funding, together with declining scientific interest in an infectious disease that seemed no longer important in the industrialised world, has led to millions of deaths in many developing countries and a return with vengeance to the richer nations.

According to the *WHO*:

- Every second someone in the world is infected with TB
- Every day more than 20,000 people develop active TB and 5,000 die of the disease
- Tuberculosis is the world's number 1 killer among curable infectious diseases
- One third of the world's population is infected with TB

The main factors contributing to the rise of TB in Western Europe and USA in the late eighties and early nineties are:

- ***The recent pandemic of HIV***. HIV infection reduces immensely the body's defences against TB. HIV and TB form a lethal combination each speeding up the other's progress,

- ***Refugees, illegal immigrants and displaced people***. Untreated TB spreads quickly in crowded refugee camps and shelters. It is difficult to treat mobile populations. As many as 50% of the world's refugees may be infected with TB. As they move, they may spread TB,

- ***Tourism and travel to countries where TB is still very common,***

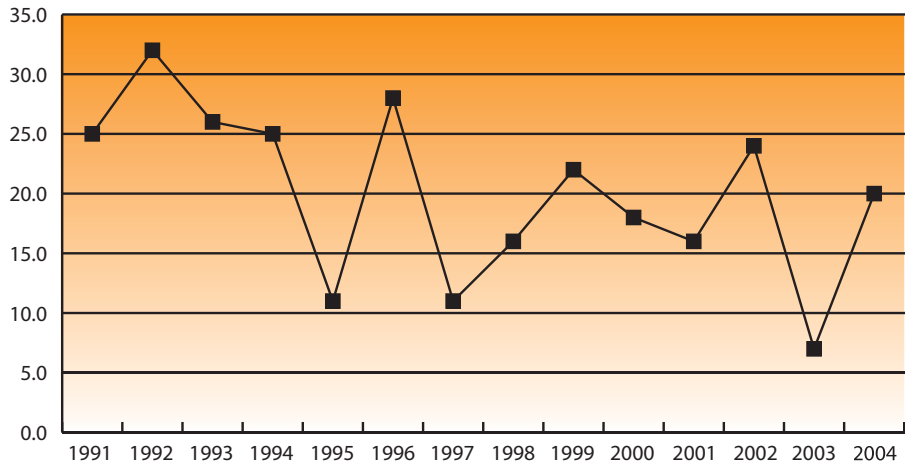
- ***Foreign workers coming from countries with a high incidence of TB***. Some of these subsequently develop the disease some time after arrival,

- ***Poorly managed TB programmes that are threatening to make TB incurable***. Although the introduction of anti-tuberculous antibiotics in the middle of the last century has made TB curable, poorly supervised and incomplete treatment of patients with TB are threatening to make TB incurable again because of the development of resistance.

Local Epidemiology

The notification rate of TB among the Maltese population is one of the lowest from a global perspective. It is around 3-7 per 100,000 with a preponderance of cases in the elderly denoting mostly old infection (as opposed to new infection in the younger age groups). Not only has it not followed the upward trend shown in many countries, but a study of the TB notification rates in Malta from 1991 to 2004 shows a decrease in

Figure 12. **Numbers of notified tuberculosis cases (1991 - 2004)**



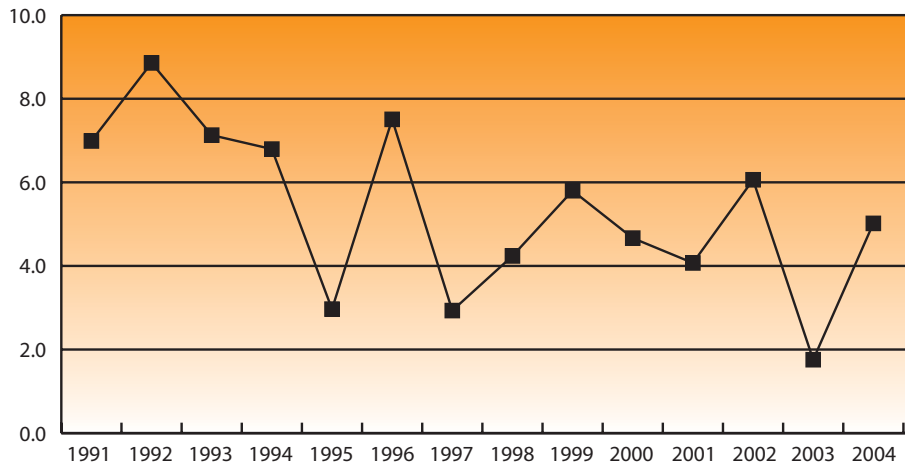
TB notification rates (*Figures 12* and *13*) This has been proved statistically using the **Poisson Regression Analysis**. Another important point in our local epidemiology is that drug resistant strains have not yet featured among the Maltese population.

A large proportion of TB cases in Malta is of foreign nationality. In 2004 60% of notified TB cases were foreigners. This is a common trend in Western Europe. A recent analysis of secular trends of TB in Western Europe has indicated that an increasing proportion and number of cases notified annually in various countries are found among persons of foreign nationality and constitutes a significant proportion of the overall incidence of TB.

Tuberculosis and HIV/AIDS

About one third of **p**eople **l**iving **w**ith **H**IV (**PLWH**) world-wide are co-infected with

Figure 13. **Crude tuberculosis rate per 100,000 (1991 - 2004)**



Mycobacterium tuberculosis. HIV fuels the TB epidemic. HIV is the most powerful known risk factor for re-activation of latent TB infection to active TB disease like no other previously recognised medical condition. HIV-infected persons who become newly infected by *M. tuberculosis* rapidly progress to active TB disease. In addition to the adverse effect of HIV on TB, an adverse effect of TB on HIV is suggested by studies that show that the host immune response to *M. tuberculosis* enhances HIV replication and might accelerate the natural progression of HIV infection. TB is the commonest cause of HIV-related deaths and accounts for almost one third of AIDS-related deaths world-wide.

For many years, those involved primarily with tackling TB and those involved primarily with tackling HIV have largely pursued separate courses. Yet in those countries with the highest rates of TB/HIV co-infection, like the sub-Saharan Africa, it is apparent that those involved primarily with tackling TB and those involved primarily with tackling HIV have a common cause. Tackling HIV means tackling TB as the single biggest killer of PLWH. Tackling TB means tackling HIV as the most potent force driving the TB epidemic. On account of the overlapping epidemiology of TB and HIV, and the mutual benefits of efforts in tackling TB and HIV, there is a growing recognition of the need for increased collaboration between the TB and HIV programmes.

Treatment

The standardised TB treatment regime is of 3 or 4 antibiotics for 6 months. The antibiotics of choice are: isoniazid, rifampicin and pyrazinamide (triple treatment regime) or isoniazid, rifampicin, pyrazinamide and ethambutol (quadruple treatment regime). Provision of curative anti-tuberculous treatment to persons with TB is given to all individuals free of charge.

It is important that the drugs are taken daily as prescribed. If treatment is not taken as directed everyday then drug-resistant organisms may result, which then become very difficult to treat. If the patient is non-compliant with treatment, the treatment is supervised daily by a nurse to make sure it is taken, taken properly and taken regularly. This is known as **DOT** (**directly observed treatment**). DOT is the cornerstone of TB control. By supervising the treatment one makes sure that the treatment is taken as prescribed, thus ensuring that the patient is cured, does not develop drug resistant TB and does not transmit TB disease to others.

DOT is the best-proven weapon we have in the fight against TB. It is one of the most cost-effective of all health interventions. DOT is implemented in 155 countries including Malta. This is one of the main reasons we have such a high cure rate and why drug resistance has not yet figured among the Maltese population.

Prophylaxis

Prophylactic TB treatment is offered to people with latent TB infection. TB infection can be detected by means of a **Mantoux test**. The treatment is usually either isoniazid for 6 months or isoniazid and rifampicin for 3 months.

Vaccination

BCG (**Bacille Calmette-Guérin**) vaccination is very effective against the serious forms of TB — mainly miliary and meningeal TB. In Malta, BCG is given to school children aged 12-14 years, contacts of TB, travellers going to high TB incidence countries and workers who are likely to meet with persons having this condition, like health-care workers. Re-vaccination is not recommended.

Conclusion

Although TB is in control in Malta, there must be increased awareness of TB as a re-emerging disease. The AIDS epidemic is still in its initial phase and a rise in HIV infection could adversely influence TB control, as happened in many other countries. Also, we are still open to imported TB, including multi-drug-resistant strains, which could increase our TB incidence. An example of this is the large influx of immigrants who arrived in Malta recently from the African continent. In this prospective, the *Department of Public Health*, through it's *Chest Unit* at *Qormi Health Centre*, will continue to adopt active measures of surveillance, prevention and control and ensure that all 'social partners' are onboard to achieve a multisectoral approach to tackle this potential problem.

Leptospirosis

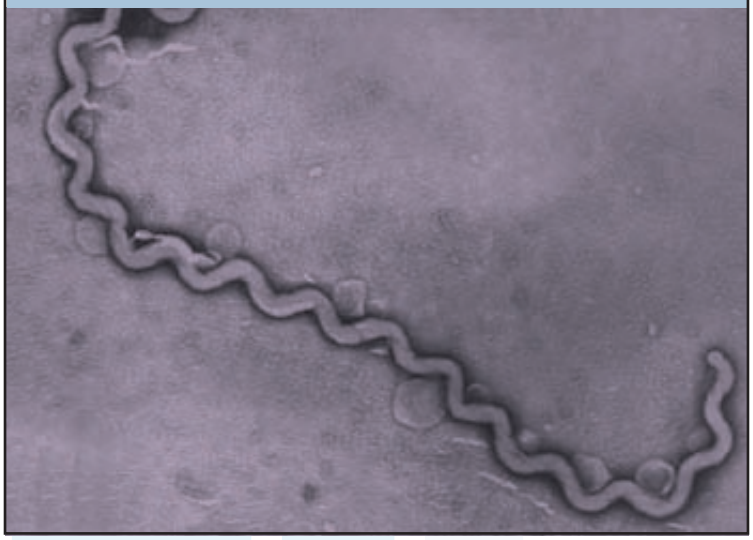
Leptospirosis is caused by *Leptospira interrogans*, a spirochaete (see *Figure 14*). It is divided into more than 200 serovars, including *icterohaemorrhagie*, *canicola*, *autumnalis and australis*. It occurs worldwide, especially in tropical countries with heavy rainfall.

Mode of Transmission

Leptospirosis is transmitted to humans in the following ways:

- Through the skin (especially if abraded), when they come into contact with contaminated urine of infected animals,
- Occasionally through ingestion of food contaminated with urine of infected animals,
- Occasionally by inhalation of droplet aerosols of contaminated fluids.

Figure 14. Leptospira interrogans



Reservoir

Wild and domestic animals, mainly rats (*icterohaemorrhagiae*), cattle (*hardjo*) and dogs (*canicola*) act as reservoirs. In carrier animals, an asymptomatic infection occurs in renal tubules, with leptospiruria.

Incubation Period

The incubation period ranges from 1 to 19 days.

Signs and Symptoms

Leptospirosis does not present with any specific symptoms. Most infected persons

have a mild to moderate illness presenting with:

- Fever
- Headache
- Chills
- Myalgia
- Red eyes

Later on, one can develop:

- Biphasic fever
- Rash
- Meningitis
- Haemolytic anaemia
- Jaundice
- Hepato-renal failure
- Haemorrhage into skin and mucosae
- Mental confusion / depression
- Pulmonary involvement
- Haemoptysis

People who are seriously ill require hospitalisation. In rare cases death can result.

Diagnosis

The main method of diagnosis is by using *Leptospira* urinary antigen.

Case Definition

The EU case definition is used for statistical purposes to define cases:

Clinical Description

Clinical picture compatible with leptospirosis, characterised by fever, headache, chills, myalgia, conjunctival suffusion, and less frequently by meningitis, rash, jaundice or renal insufficiency.

Laboratory Criteria

- Isolation of *Leptospira* from a clinical specimen
- Demonstration of a specific increase in *Leptospira* agglutination titre
- Demonstration of *Leptospira* in a clinical specimen by immunofluorescence
- Detection of *Leptospira* IgM antibody in serum

Case classification is divided into:

Possible: Not applicable.
Probable: Not applicable.
Confirmed: A clinically compatible case that is laboratory confirmed.

Treatment

The mainstay of treatment includes:

- Articles which are soiled with urine should be disinfected,
- Isolation, taking the necessary blood and body fluids precautions,
- Antibiotic treatment used for leptospirosis: benzyl penicillin or doxycycline.

Preventive Measures

- Educating the public on modes of transmission — avoiding swimming or wading in potentially contaminated waters and using proper protection when work requires such exposure,
- Workers should wear protective clothing i.e. boots, gloves and aprons,
- Recognising potentially contaminated waters and soil, and draining such waters when possible,
- Controlling rodents,
- Infected domestic animals are segregated to prevent contamination of human living, working and recreational areas by their urine.

Epidemic Measures

The sources of possible exposure are identified and eliminated. Industrial and occupational sources are also investigated, including direct animal contact.

What Happens When the Disease Surveillance Unit Receives a Notification of Leptospirosis?

When the *Disease Surveillance Unit* receives a notification of a patient suffering from leptospirosis, the physician who is taking care of the patient is contacted to enquire about the mode of presentation and medical condition of the patient and whether the case has been laboratory confirmed or not. Public health physicians of the *DSU* contact the patient (or relatives, in case the patient is unconscious or has passed away) to establish the exposures to possible risk factors including work and hobbies. The medical officers contact the *Rodent Control Unit* and the *Regional Environmental Health Officers* (*Regional Health Inspectors*) to carry out a joint inspection at the site or sites of possible source of infection. Relatives and friends are informed by the medical officers regarding the mode of transmission and preventive measures. Once the inspections are carried out, the *Governmental Veterinary Services* are contacted if there are domestic animals on site. The veterinary officers will carry out the necessary examinations and/or investigations of the animals and according to the results they take the necessary actions.

Notifiable Infectious Diseases: Annual Tabulated Summary for 2004

The data given in this summary includes the total number of confirmed cases notified to the *Disease Surveillance Unit*. Confirmation is based on standardised case-definitions according to clinical criteria and are not necessarily confirmed by laboratory diagnostic investigations.

Table 4 shows data on individual case reports. For the purposes of this report a resident is defined as any person who has been residing in Malta for at least six months. *Table 5* demonstrates the total number of persons involved in outbreaks and the number of outbreaks reported. An outbreak is defined as the identified occurrence of disease in two or more individuals linked by time, place or person. The data for these tables are also arranged by gender and quarterly intervals. *Table 6* shows the reported deaths from notifiable infectious diseases in 2004.

Table 4. **Confirmed individual case reports by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases)**

Notifiable Disease	Total	Males	Females	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul-Sep)	Q4 (Oct-Dec)
Acute Flaccid Paralysis	1	1	—	1	—	—	—
	—	—	—	—	—	—	—
Acute Viral Encephalitis	2	—	2	—	1	1	—
	—	—	—	—	—	—	—
AIDS	1	1	—	—	1	—	—
	1[1]	1	—	—	1	—	—
Chickenpox	561[2]	313	248	193	124	95	149
	4[3]	3	1	2	1	1	—
Chlamydia	23	15	8	7	4	6	6
	—	—	—	—	—	—	—
Cryptosporidiosis	7[3]	6	1	2	2	1	2
	—	—	—	—	—	—	—
Erysipelas	4	—	4	1	1	1	1
	—	—	—	—	—	—	—
Food Poisoning, *Campylobacter*	67	41	26	13	20	19	15
	3	—	3	—	—	1	2
Food Poisoning, *E. coli*	6	5	1	1	—	4	1
	—	—	—	—	—	—	—
Food Poisoning, *Salmonella*	51[3]	22	29	8	9	17	17
	5[3]	1	4	2	2	1	—
Food Poisoning, Scombrotoxic	4	1	3	—	—	3	1
	—	—	—	—	—	—	—
Food Poisoning, *Shigella*	1[3]	—	1	—	—	1	—
	—	—	—	—	—	—	—
Food Poisoning, Unspecified	142[4]	78	64	48	52	23	19
	11	8	3	1	3	5	2
Giardiasis	4[5]	2	2	2	—	1	1
	—	—	—	—	—	—	—

Table 4. **Confirmed individual case reports by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases) — continued from previous page**

Notifiable Disease	Total	Males	Females	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul-Sep)	Q4 (Oct-Dec)
Gonorrhoea	19	17	2	6	3	5	5
	—	—	—	—	—	—	—
Hepatitis B	4	4	—	1	1	1	1
	2	1	1	2	—	—	—
Hepatitis C	2	1	1	—	—	1	1
	—	—	—	—	—	—	—
Herpes simplex	1	—	1	1	—	—	—
	—	—	—	—	—	—	—
HIV	9	6	3	—	—	5	4
	6	5	1	1	—	1	4
Legionnaire's Disease	1	1	—	1	—	—	—
	3	2	1	1	—	—	2
Leishmaniasis, Visceral	4	2	2	2	2	—	—
	—	—	—	—	—	—	—
Leptospirosis	3	3	—	—	1	2	—
	—	—	—	—	—	—	—
Measles	4	3	1	2	1	—	1
	—	—	—	—	—	—	—
Meningitis, Other Bacterial	14	6	8	7	3	3	1
	2	1	1	—	—	2	—
Meningococcal Meningitis	2	1	1	—	—	1	1
	—	—	—	—	—	—	—
Meningococcal Septicaemia	10	5	5	3	—	4	3
	1	—	1	—	—	1	—
Mumps	7	3	4	1	2	2	2
	—	—	—	—	—	—	—
Pertussis	6	1	5	—	2	1	3
	—	—	—	—	—	—	—
Scarlet Fever	1	—	1	1	—	—	—
	—	—	—	—	—	—	—
Shingles	27[3]	14	13	3	4	6	14
	—	—	—	—	—	—	—
Syphilis	1	—	1	—	—	1	—
	—	—	—	—	—	—	—
Syphilis, Latent	6	5	1	—	—	5	1
	—	—	—	—	—	—	—
Syphilis, Primary	2	2	—	—	—	—	2
	—	—	—	—	—	—	—
Syphilis, Secondary	3	3	—	—	1	—	2
	—	—	—	—	—	—	—
Toxoplasmosis	4	2	2	4	—	—	—
	1	1	—	1	—	—	—
Tubeculosis, Extra-pulmonary	5[4]	4	1	—	—	4	1
	1[1]	1	—	—	—	1	—
Tuberculosis, Pulmonary	5[4]	2	3	2	2	—	1
	8[6]	6	2	—	—	2	6
Typhus, Murine	13	9	4	1	2	4	6
	—	—	—	—	—	—	—
Typhus, Tick-borne	5	3	2	—	—	3	2
	—	—	—	—	—	—	—

[1] This case was imported.
[2] These cases include 68 clusters of 2 cases, one of which was imported, 37 clusters of 3 cases, 12 clusters of 4 cases, 5 clusters of 5 cases each, 1 cluster of 6, 1 cluster of 7 cases and 1 cluster of 9 cases. These also included 3 sporadic imported cases.
[3] This includes 1 imported case.
[4] These include 2 imported cases.
[5] These include 3 imported cases.
[6] These cases were imported.

***Table 5*. Reported cases involved in outbreaks, by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases; figures in brackets indicate the number of implicated outbreaks)**

Notifiable Disease	Total	Males	Females	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul-Sep)	Q4 (Oct-Dec)
Food Poisoning, *Campylobacter* (14)	28*	14	14	16	6	—	6
	2	1	1	—	—	—	2
Food Poisoning, *Salmonella* (9)	24	13	11	—	9	9	6
	2	1	1	—	—	2	—
Food Poisoning, Scombrotoxic (2)	6	5	1	2	4	—	—
	—	—	—	—	—	—	—
Food Poisoning, *Shigella* (1)	2	—	2	—	—	2	—
	—	—	—	—	—	—	—
Food Poisoning, Unspecified (54)	188	85	103	36	103	8	41
	25	12	13	16	5	2	2
Legionnaire's Disease (4)	—	—	—	—	—	—	—
	10	8	2	1	1	6	2
Tuberculosis, Pulmonary (1)	2	1	1	—	—	—	—
	—	—	—	—	—	—	—
Typhus, Tick-borne (1)	2	1	1	—	—	2	—
	—	—	—	—	—	—	—

* Two of these cases were imported.

***Table 6*. Reported deaths from notifiable infectious diseases in 2004 (a total of ten deaths)**

Notifiable Disease	Total
AIDS	1
Chickenpox	1
Hepatitis C	1
Legionnaire's Disease	2
Leptospirosis	1
Meningococcal septicaemia	3
Meningitis, other bacterial	1

Notifiable Infectious Diseases: Tabulated Summary 2000 - 2004

For the purposes of this report a resident is defined as any person who has been residing in Malta for at least six months. These notifications have been confirmed through standardised case-definitions based on clinical criteria, and are not necessarily confirmed by laboratory diagnostic investigations. These figures are updated to include any amendments made to previous annual reports.

Table 7 is a summary of the reported notifiable infectious disease in Malta from 2000 to 2004. It is grouped into resident and non-resident cases, and includes infections acquired from abroad. *Table 8* demonstrates the total number of persons involved in outbreaks and the number of outbreaks reported from 2000 to 2004. An outbreak is defined as the identified occurrence of disease in two or more individuals linked by time, place or person. *Table 9* shows the number of deaths from notifiable infectious diseases in Maltese residents between 2000 and 2004.

***Table 7*. Confirmed individual case reports by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases)**

Notifiable Disease	2000	2001	2002	2003	2004
Acute Flaccid Paralysis	4	2	5	—	1
	—	1	—	—	—
Acute Viral Encephalitis	1	1	2	2	2
	—	—	—	—	—
AIDS	3	—	4	2	1
	—	1	—	2	1
Brucellosis	—	—	1	—	—
	—	—	—	—	—
Chickenpox	299	174	176	692	561
	2	3	4	4	4
Chlamydia	—	—	—	—	23
	—	—	—	—	—
Congenital Rubella Syndrome	—	—	—	—	—
	—	—	—	—	—
Cryptosporidiosis	—	—	—	—	7
	—	—	—	—	—
Erysipelas	—	—	1	—	4
	—	—	—	—	—
Food Poisoning, *Campylobacter*	17	24	30	47	67
	—	—	1	1	3
Food Poisoning, *E. coli*	19	3	13	1	6
	1	1	—	—	—
Food Poisoning, *Salmonella*	34	28	67	76	51
	1	1	3	1	5
Food Poisoning, Scombrotoxic	3	3	2	1	4
	—	1	1	1	—
Food Poisoning, *Shigella*	—	—	3	1	1
	—	—	1	—	—

Table 7. **Confirmed individual case reports by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases) — continued from previous page**

Notifiable Disease	2000	2001	2002	2003	2004
Food Poisoning, Unspecified	71	56	53	146	142
	11	14	9	14	11
Giardiasis	—	—	—	—	4
	—	—	—	—	—
Gonorrhoea	—	—	—	—	19
	—	—	—	—	—
Hepatitis A, Acute	4	—	2	3	—
	2	—	—	—	—
Hepatitis B, Acute	4	5	3	2	4
	—	—	1	—	2
Hepatitis C, Acute	—	—	1	—	2
	—	—	—	—	—
Herpes simplex	1	—	—	—	1
	—	—	—	—	—
HIV	—	—	—	—	9
	—	—	—	—	6
Legionnaire's Disease	9	4	—	2	1
	1	—	—	4	3
Leishmaniasis, Cutaneous	11	8	—	1	—
	—	—	—	—	—
Leishmaniasis, Visceral	7	5	—	3	4
	—	—	—	—	—
Leptospirosis	—	—	—	1	3
	—	—	—	—	—
Malaria (acquired from abroad)	2	3	2	—	—
	5	4	5	—	—
Measles	2	2	7	4	4
	—	—	—	—	—
Meningitis, Other Bacterial	9	9	8	9	14
	2	1	2	—	2
Meningococcal Meningitis	9	7	4	4	2
	1	—	—	—	—
Meningococcal Septicaemia	22	14	10	13	10
	—	1	—	—	1
Mumps	386	7	11	4	7
	—	—	—	—	—
Pertussis	3	1	4	7	6
	—	—	—	—	—
Rubella	6	—	2	4	—
	—	—	—	—	—
Scarlet Fever	1	1	—	1	1
	—	—	—	—	—
Shingles	24	12	11	18	27
	—	—	—	—	—
Syphilis	—	—	—	—	1
	—	—	—	—	—
Syphilis, Latent	—	—	—	—	6
	—	—	—	—	—
Syphilis, Primary	—	—	—	—	2
	—	—	—	—	—
Syphilis, Secondary	—	—	—	—	3
	—	—	—	—	—

Table 7. Confirmed individual case reports by gender and by quarter (non-coloured areas refer to resident cases; coloured areas refer to non-resident cases) — continued from previous page					
Notifiable Disease	**2000**	**2001**	**2002**	**2003**	**2004**
Tetanus	1	1	2	1	—
	—	—	—	—	—
Toxoplasmosis	—	—	—	—	4
	—	—	—	—	1
Tuberculosis, Extra-Pulmonary	2	—	5	1	5
	1	1	—	2	1
Tuberculosis, Pulmonary	15	10	11	3	5
	—	3	8	1	8
Typhoid	—	—	—	—	—
	—	—	—	—	—
Typhus, Murine	29	36	19	19	13
	—	—	—	—	—
Typhus, Tick-Borne	13	14	15	14	5
	—	—	—	—	—

Table 8. Reported cases involved in outbreaks (non-coloured areas refer to residents; orange-coloured areas refer to non-residents; grey-coloured areas indicate the number of outbreaks)					
Notifiable Disease	**2000**	**2001**	**2002**	**2003**	**2004**
Food Poisoning, *Bacillus cereus*	—	—	—	—	—
	—	—	—	—	—
	—	—	—	—	—
Food Poisoning, *Campylobacter*	11	—	10	11	28
	2	—	—	—	2
	5	—	5	5	14
Food Poisoning, *E. coli*	17	7	2	—	—
	—	—	—	—	—
	6	2	1	—	—
Food Poisoning, *Salmonella*	51	105	27	111	24
	4	—	22	3	2
	6	3	8	11	9
Food Poisoning, Scombrotoxic	—	18	4	5	6
	—	—	—	—	—
	—	3	2	2	2
Food Poisoning, *Shigella*	3	—	—	—	2
	—	—	—	—	—
	1	—	—	—	1
Food Poisoning, Unspecified	80	97	206	106	188
	45	14	116	26	25
	22	28	35	32	54
Hepatitis A, Acute	—	—	—	—	—
	—	—	—	—	—
	—	—	—	—	—
Legionnaires's Disease	—	—	—	—	—
	—	—	—	4	10
	—	—	—	1	4
Tuberculosis, Pulmonary	—	—	—	—	2
	—	—	—	—	—
	—	—	—	—	1
Typhus, Tick-Borne	—	2	—	—	2
	—	—	—	—	—
	—	1	—	—	1

Table 9. Reported deaths from notifiable diseases in Maltese residents					
Notifiable Disease	**2000**	**2001**	**2002**	**2003**	**2004**
Acute Flaccid Paralysis	1	—	2	—	—
Acute Viral Encephalitis	1	—	2	1	—
AIDS	1	—	2	2	1
Chickenpox	—	—	—	1	1
Food Poisoning, *Salmonella*	1	—	1	—	—
Hepatitis A, Acute	—	—	—	—	—
Hepatitis B	—	—	1	—	—
Hepatitis C	—	—	—	—	1
Legionnaire's Disease	—	—	—	1	2
Leishmaniasis, Visceral	1	3	—	—	—
Leptospirosis	—	—	—	—	1
Meningitis, Other Bacterial	1	—	—	2	1
Meningococcal Meningitis	—	—	1	—	—
Meningococcal Septicaemia	3	1	2	—	3
Tetanus	1	—	—	—	—
Tuberculosis, Pulmonary	—	—	—	1	—

Appendix: Infectious Disease Certificate

Sixty seven specified communicable diseases and health conditions are now statutory notifiable. Notification is mandatory by law to all doctors in both public and private sectors. In terms of Article 27 (a) (i) of the Public Health Act, the Superintendent of Public Health has declared the lst of notifiable diseases. This notice was issued in the Government Gazette No. 17,533 dated 27th January 2004.

Details of patients and disease are sent via the **Infectious Disease Certificate** by post or fax to the *Disease Surveillance Unit* on behalf of the Superintendent of Public Health. A copy of this certificate is printed on the next page. Extra copies of the Infectious Disease Certificate may be obtained from the DSU (***Tel: 21324086***, ***Fax: 21319243***, ***E-mail: disease.surveillance@gov.mt***). Copies may also be downloaded from the *DSU*'s website: ***www.health.gov.mt/dsu***.

Infectious Disease Certificate

Disease Surveillance Unit - Department of Public Health - 37-39 Rue D'Argens Msida - Malta MSD05
Tel: +356 2133 2235, +356 21311774 - Fax: +356 2131 9243
Email: disease.surveillance@gov.mt - Website: www.health.gov.mt/dsu

Patient data

Name ☐☐☐☐☐☐☐☐☐ ID No. ☐☐☐☐☐☐☐☐

Surname ☐☐☐☐☐☐☐☐☐ Patient Code ☐☐☐☐☐☐☐☐

Tel No. ☐☐☐☐☐☐☐☐☐ Male ☐ Female ☐

Employment ☐☐☐☐☐☐☐☐☐ Age ☐☐

Address

SAMPLE

is suffering from:

- ☐ Acquired Immune Deficiency Syndrome (AIDS)
- ☐ Acute encephalitis
- ☐ Acute flaccid paralysis
- ☐ Anthrax
- ☐ Antimicrobial Resistance
- ☐ Bacterial meningitis, other than meningococcal
- ☐ Botulism
- ☐ Brucellosis
- ☐ Campylobacteriosis
- ☐ Chickenpox/Shingles
- ☐ Chlamydia infection
- ☐ Cholera
- ☐ Congenital rubella syndrome
- ☐ Cryptosporidiosis
- ☐ Dengue
- ☐ Diphtheria
- ☐ Dysentery (amoebic and bacillary)
- ☐ Echinococcosis
- ☐ Erysipelas
- ☐ E. coli: Enterohaemorrhagic
- ☐ Food borne illness
- ☐ Giardiasis
- ☐ Gonococcal Infection
- ☐ Granular conjunctivitis / trachoma
- ☐ Haemophilus influenza group B
- ☐ Hepatitis A
- ☐ Hepatitis B
- ☐ Hepatitis C
- ☐ HIV-Infection
- ☐ Influenza
- ☐ Legionellosis
- ☐ Leishmaniasis
- ☐ Leprosy
- ☐ Leptospirosis
- ☐ Listeriosis
- ☐ Louse borne relapsing fever
- ☐ Malaria
- ☐ Measles
- ☐ Meningococcal disease
- ☐ Mumps
- ☐ Nosocomial Infection

  Hospital ____________________

  Infection site ____________________
- ☐ Pertussis
- ☐ Plague
- ☐ Pneumococcal infection
- ☐ Pneumonia
- ☐ Poliomyelitis
- ☐ Puerperal fever
- ☐ Q-fever
- ☐ Rabies
- ☐ Rubella
- ☐ Salmonellosis
- ☐ Scarlet fever
- ☐ Severe Acute Respiratory Syndrome (SARS)
- ☐ Shigellosis
- ☐ Smallpox
- ☐ Syphillis
- ☐ Tetanus
- ☐ Toxoplasmosis
- ☐ Transmissible spongiform encephalopathies, variant Creutzfeldt-Jakob disease (vCJD)
- ☐ Trichinosis
- ☐ Tuberculosis
- ☐ Tularaemia
- ☐ Typhoid fever
- ☐ Typhus
- ☐ Viral haemorrhagic fever
- ☐ Yellow fever
- ☐ Yersinosis

Doctor data

Name ☐☐☐☐☐☐☐☐☐ Tel No. ☐☐☐☐☐☐☐☐☐

Surname ☐☐☐☐☐☐☐☐☐ Reg No. ☐☐☐☐

Date ☐☐☐☐☐☐

Signature ____________________

IN CASES REQUIRING URGENT ACTION PLEASE CONTACT ST. LUKE'S HOSPITAL ON 21241251

All data is collected in accordance with Article 27 (a) (i) of the Public Health Act and the Data protection Act 2001. The data is required for control measures, statistics and research purposes in the interest of public health. DPH 35

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List of Abbreviations

AIDS — Acquired Immune Deficiency Syndrome
DSU — Disease Surveillance Unit
EHEC — Enterohaemorrhagic Escherichia coli
HIV — Human Immunodeficiency Virus
MD — Meningococcal Disease
STI — Sexually Transmitted Infections
TB — Tuberculosis
WHO — World Health Organisation

List of Figures

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