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Introduction
The Infectious Disease Prevention and Control Unit
BACKGROUND

2008 brought further changes to the Infectious Diseases Prevention and Control Unit (IDCU). Following changes towards the end of summer of 2007, whereby the unit started to form part of the Health Promotion and Disease Prevention Department, the IDCU offices have moved so that they are now in the same location as the Health Promotion Unit at the Emporium in Msida.

AIMS AND OBJECTIVES

The IDCU still maintains its role as the national surveillance centre for communicable diseases in Malta with its main aims and objectives being:

- 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 communicable disease control.
NOTIFICATION TO IDCU

Communicable disease surveillance is the main focus of this Unit relying substantially on the notification of any infectious diseases encountered by medical doctors and reported to us.

Notification to the IDCU can be made in a variety of ways:

- The Infectious Disease Certificate by postal mail or fax to the Infectious Disease Prevention and Control Unit
- Synapse Direct, a secure on-line system—see www.theSynapse.net for more information
- A 24-hour on-call service also operates for emergencies and urgent notifications via the Mater Dei Hospital switchboard (Tel: 25450000)
- The laboratories of the Department of Pathology at Mater Dei Hospital and other private medical diagnostic laboratories notify us of any key infections they encounter. These laboratories serve to detect infections at a primary level. In instances where it is deemed necessary to carry out any further investigations and confirmatory tests, clinical samples may be sent to reference laboratories overseas
- The Department of Health Information and Research which processes all death certificates also sends any reports of deaths which are directly attributed to notifiable infectious diseases directly to the IDCU.
- People can also self-notify and inform us of any infectious illness they or somebody they know is suffering from and the Unit will investigate accordingly.

Once data is received about a case of a communicable disease the staff of the IDCU verifies it, validates it, inputs it into an in-house database and analyses it.

The IDCU has its website regularly maintained and updated by the Senior Environmental Health Officer working there.

CONTROL AND PREVENTION

Important decisions concerning which prevention and control strategies should be given priority are also one of the tasks performed by the IDCU.

This can only be done by the continuous monitoring of the frequency and distribution of disease and deaths due to infections that can be transmitted from human to human or from animals, food, water or the environment to humans, and the monitoring of risk factors for these infections. Apart from being important because it aids in the investigation of the individual cases this surveillance gives us relevant information as regards to which infections are the most important causes of illness, disability and death and so the decisions on priority can be taken.

Also, the information obtained regarding how the number of cases of a particular infection change over time helps us to assess whether certain control and prevention activities, such as vaccination programmes, are being effective in reducing the frequency of disease and its consequences.

All this requires the co-operation of doctors, laboratories, other Departments and the general public which keep us regularly informed of all the cases concerning Infectious Diseases that they come across.

Where necessary, the medical doctors investigating a case will liaise with staff from other Units and Departments to carry out a proper investigation. This occurs mostly where environmental action is required through the health inspectors within the Health Inspectorate. This mostly involves the Food Safety Unit and the Environmental Health Unit.
The **Chest Unit** which is based at Qormi Health Centre and is managed by two nurses and continues to be responsible for data collection in cases of tuberculosis as well as carrying out public health preventive measures related to tuberculosis including screening and vaccination.

### OUTBREAKS

Another important task is the detection and investigation of outbreaks. It is essential that action is taken within the shortest time possible so that the source of the outbreak can be identified and contained as quickly as possible.

Once an outbreak is reported to the Unit an IDCU medical officer immediately initiates an investigation and then regularly follows up the case for timely control measures to be taken.

Most of the outbreaks encountered involve food borne disease, particularly *Salmonella*, *Campylobacter*, toxic and other unspecified bacterial and viral causes of diarrhoea.

### DISSEMINATION OF DATA

The Unit issues monthly reports on all cases that have been notified and confirmed. Annual tabulated reports as well as an Annual Report of confirmed cases are also issued.

Data is also sent to health authorities of neighbouring countries, the WHO European Regional Office and the Istituto Superiore di Sanita’ in Rome, Italy. The WHO and its collaborating centres are regularly provided with requested data on specific infectious diseases.

The IDCU regularly reports its data to TESSy, The European Surveillance System and all the preparation, conversion and submittal of data to TESSy are performed by this office.

The IDCU website is regularly updated and contains an amount of data which is freely available. Here one can find information about the commoner infectious diseases which might be required by the general public, as well as the reports, statistics and various publications that have been issued by the Unit. There are also links to related health organisations in other countries and various information sources on infectious diseases. It is available at [www.health.gov.mt/dsu](http://www.health.gov.mt/dsu)

The IDCU also keeps doctors informed about the investigation and outcome of their notification. It is also available for information and advice on communicable diseases to the general public (including advice on travel health) and health-care professionals.
INTERNATIONAL COLLABORATION

The Infectious Disease Prevention and Control Unit collaborates with European communicable disease-specific networks and other programmes on surveillance and control and all information it has on surveillance, reported cases and outbreaks and control with the following networks:

- **CCASHH** – European Project on food and water borne disease (data from 1997 to present)
- **CCEE Baltics Network** – Measles Surveillance
- **EISS** – European Influenza Surveillance Scheme
- **ENTERNET** – Salmonella, Campylobacter, EHEC Surveillance
- **EPIET** – European Programme for Intervention Epidemiology Training
- **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** Global Eradication of Smallpox
- **WHO** Measles Surveillance in European Region
- **WHO** Surveillance Programme for Control of Food borne Infections and Intoxications in Europe
- **TESSy** - The European Surveillance System
Surveillance reports
on selected communicable diseases
ACUTE FLACCID PARALYSIS

Active surveillance continued throughout 2008 with reporting to WHO. There were no cases of AFP in children < 15 years of age during the year.

ACUTE VIRAL ENCEPHALITIS

There were no cases of acute viral encephalitis.

AIDS & HIV

During 2008 there were 36 cases of HIV notified to the Unit – 34 cases occurred in Maltese residents (of which 24 were of foreign nationality), and among these there were 2 clusters of 2 cases each. The other 2 cases occurred in non-residents.

Eight of the HIV cases were cases of AIDS. All these cases were males and Maltese residents but six were of foreign nationalities. Four of these cases had concurrent infection with Pulmonary Tuberculosis. One of the AIDS cases is deceased.

Eleven of the total 36 cases were female and six of these were pregnant. Twenty five of these cases were due to heterosexual contact, and eight of the cases were homosexual/bisexual men (MSM).

Over the past years there have been an increasing number of foreigners being diagnosed with HIV or AIDS in Malta with a large proportion of these coming from Northern African countries. The percentage of females infected has also increased, as have cases resulting from heterosexual contact.
The principal ways in which HIV can be transmitted are through unprotected sexual intercourse with an infected person, 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.

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<th>Deaths</th>
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</tr>
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<td>1987</td>
<td>2</td>
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</tr>
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<td>1988</td>
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<td>2008</td>
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<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>57</td>
</tr>
</tbody>
</table>

Table 1: Number of notified cases and deaths due to AIDS in Maltese residents 1986 – 2008

<table>
<thead>
<tr>
<th>Transmission category</th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homo/Bisexual men (MSM)</td>
<td>37</td>
</tr>
<tr>
<td>Haemophiliacs/Coagulation disorders</td>
<td>14</td>
</tr>
<tr>
<td>Heterosexual contact</td>
<td>20</td>
</tr>
<tr>
<td>Homo/Bisexual Contact</td>
<td>1</td>
</tr>
<tr>
<td>Mother to child (abroad)</td>
<td>1</td>
</tr>
<tr>
<td>Injecting drug users</td>
<td>0</td>
</tr>
<tr>
<td>Other/Undetermined</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>78</strong></td>
</tr>
</tbody>
</table>

Table 2: Cases of AIDS in Maltese residents by transmission category 1985-2008
BACTERIAL MENINGITIS (OTHER THAN MENINGOCOCCAL)

In 2008 15 cases of meningitis caused by bacteria other than Neisseria meningitides were reported to IDCU. Whilst 14 of the cases occurred in residents, 1 case occurred in a non-resident and this case was fatal. In the 14 cases affecting residents there were 8 males and 6 females affected.
CHICKENPOX & HERPES ZOSTER (SHINGLES)

Chickenpox continues to be the most common vaccine-preventable disease that is notified to IDCU, although the incidence rate of this viral infection was on the decline. It still, however, causes a significant burden in loss of school days, loss of work for parents, possible admissions and possible complications. The majority of cases occur in school-age children and a total of 430 cases were reported in 2008, 67 of which occurred in non-residents.

FIGURE 2
Incidence rate of chickenpox, Malta, 1991-2008
HERPES ZOSTER

Similarly for chickenpox there was a decreasing incidence of Herpes zoster over the last few years. In 2008 the number of cases went up to 36.

FIGURE 3
Incidence rate of Herpes Zoster, Malta, 1991-2008

FOOD BORNE ILLNESS

Food borne illnesses continue to be a major public health problem. The number of cases of food borne diseases that are notified to the IDCU depends on a number of factors. This includes the rates of notifications that are received both from the general public as well as from physicians and also those referred for investigations from the Infectious Disease Unit (IDU) of Mater Dei Hospital. The picture, however, is still not reflective of the amount of illness in the community and is thought to be only the tip of the iceberg. The main reason is that since many disease episodes are self-limiting they often do not even reach the physician. In addition it is thought that many physicians fail to notify such illnesses for various reasons.

The most common food borne diseases are caused by Salmonella, Campylobacter and E. coli 0157. Many of these cases that come to our attention represent moderately severe to very severe symptomatic or symptomatically prolonged cases that either require hospitalisation or where stool sampling was thought to be required to aid management. Many less severe cases are treated by physicians in the community and many are given empirical antibiotics. The actual picture is therefore unknown.

Notified food-borne outbreaks and clusters in 2008 have affected about 241 people. These outbreaks show a predominant association with households (37%), while 19 % and 13% originated from restaurants and hotels respectively. Institutions were responsible for 9% of the outbreaks and these were mostly of unknown cause.
Noroviral disease in the community was represented by two notified outbreaks involving 13 persons but does not reflect the burden of disease in the community as the majority of cases and outbreaks are not notified. Characteristic with viral gastroenteritis is the large number of people affected in close communities typified in 2008 by a school outbreak involving an estimated 101, mainly children, an imported outbreak affecting 40 persons and an outbreak in an old people’s home affecting another 44 residents.

**Campylobacter** affected 70 individual cases and 7 separate outbreaks affecting 18 cases.

**Escherichia coli** affected 12 individual cases (10 residents and 2 non-residents). There were 2 separate outbreaks affecting three cases.

**Salmonella** affected an unprecedented 140 individual cases and 19 separate outbreaks or clusters involving an estimated total of 48 persons. This is the highest peak since 1995.

**Scombrotoxin** poisoning has involved two individual cases as well as two outbreaks of two persons each.

**Giardiasis**: there were three sporadic cases reported and no outbreaks. Locally this is a very uncommon intestinal pathogen. Since infections with this protozoan require contact tracing, stool testing of family members and possible sources are investigated. The capacity to investigate and test for giardiasis should be maintained as this pathogen has the potential to cause individual as well as clusters/outbreaks usually from faecally contaminated waters/food or person-to-person. Persons with HIV-AIDS can have more serious and prolonged disease.

**Cryptosporidiosis**: only one case was reported during 2008.

**Unspecified** food-borne illness affected a total of 59 individuals and 30 outbreaks involving 119 persons.

**Shigellosis** affected three individuals after which no cases were reported since 2005.

**FIGURE 4**

Incidence rate of Food borne illnesses in Malta, 1992-2008
HEPATITIS

Hepatitis A
There were 4 cases of Hepatitis A notified to the Unit in 2008. They were all in Maltese residents.

Hepatitis B
In 2008, the Infectious Diseases Prevention and Control Unit received 9 cases of acute hepatitis B, four of which were imported and one of which was deceased. This could, however, be an underestimate, due to under-reporting. Efforts are being made to improve reporting by collecting all laboratory reports relating to Hepatitis B. This would result in more complete information.

Hepatitis C
In Malta, the incidence of acute Hepatitis C seems to be relatively low. In 2008 12 cases of acute Hepatitis C were reported to IDCU. Again, this is probably a consequence of severe under-reporting rather than the true picture of what is happening in this country with regards to this disease.
LEGIONNAIRE’S DISEASE

In Malta we have seen a number of cases of Legionnaires’ disease diagnosed and confirmed by urinary antigen testing over the past few years. The incidence of cases varies but there are usually a small number of cases being notified every year.

In 2008 there were 3 cases of Legionnaire’s disease reported to IDCU. All were diagnosed and confirmed through urinary antigen testing. One of these cases was reported through the European Working Group on Legionella infections and involved a tourist who acquired the disease during the stay in Malta. This case was part of a cluster and was duly investigated and the report sent to EWGLI. Two other cases were associated with households and were diagnosed in Malta. Both were Maltese. One death was recorded from these 3 cases.

FIGURE 5
Incidence rate of Legionnaire’s disease in Malta, 1991-2008
LEISHMANIASIS

Cutaneous Leishmaniasis

Although between 2003 and 2006 only 1 case of Cutaneous Leishmaniasis was reported in 2003, an increase was seen in 2007 with 8 cases and in 2008 when 14 cases of cutaneous Leishmaniasis were notified. Two outbreaks involving four cases were also notified.

FIGURE 6
Incidences rate of Cutaneous Leishmaniasis, Malta, 1990-2008
**Visceral Leishmaniasis**

The incidence rate of notified cases of Visceral Leishmaniasis has slowly decreased over the last 10 years.

Since 2003 the number of cases seems to have stabilised at between 3-4 cases per year. In 2008 two cases were reported.

**FIGURE 7**

Incidence rate of Visceral Leishmaniasis, Malta, 1990-2008
LEPTOSPIROSIS

There were two cases of Leptospirosis notified to IDCU during 2008.

MALARIA

There were three cases of Malaria reported in 2008, two males and one female. All three cases were imported from abroad, all from travel to an African country.

FIGURE 8
Incidence rate of Malaria cases, Malta, 1990-2008
MEASLES, MUMPS & RUBELLA

There was one case of measles.
There were three sporadic cases of rubella and one outbreak involving three cases (two males and one female).

There was one reported case of pertussis.

MENINGOCOCCAL DISEASE

During the year 2008, twelve cases of meningococcal disease (MD) were reported in Maltese residents. All were sporadic cases. MD was reported in three males and nine females and two of the cases involving female cases had a fatal outcome. The main clinical diagnosis was meningitis in eight cases whilst the other four cases were septicaemia, one of which is deceased. There were no cases involving meningitis and septicaemia together. During the previous year, thirteen cases were notified.

Of the thirteen cases, N. meningitides was cultivated in three cases. Information on serogroup, type and subtype is available for these three cases. Serogroup C accounted for two cases and Serogroup B for one case.

Figure 9
Incidence rate of Meningococcal disease, Malta, 2000-2008
Similar to previous years the predominant serogroup that was cultured was group B *Neisseria meningitidis*. The table below shows in detail the number of cases in which *N. meningitidis* was cultured.

<table>
<thead>
<tr>
<th>Year</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cases/year</td>
<td>14</td>
<td>11</td>
<td>39</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Serogroups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
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<td>C</td>
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<td>Total cultured</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

**Table 3: Cultivated serogroups of Meningococcal disease 2004 - 2008**

**SCARLET FEVER**

There were 38 sporadic cases of Scarlet fever and four outbreaks involving eleven people (one outbreak – four cases, one outbreak – three cases and two outbreaks – two cases each). This is a large increase when compared to last year when only one case of Scarlet Fever was notified to the IDCU.

**SEXUALLY TRANSMITTED INFECTIONS: CHLAMYDIA, GONORRHOEA AND SYPHILIS**

In Malta, over the past few years, there has been a significant increase in the numbers of sexually transmitted infections, especially Gonorrhoea and Chlamydia.

In 2008, there were 106 cases of Chlamydia, four of which involved persons of foreign nationality.

There were 49 cases of Gonorrhoea reported, two of which were persons of foreign nationality. The prevalent strain of Gonorrhoea has become resistant to commonly used antibiotics.

There were 11 cases of Latent Syphilis, two in non-residents and seven in Maltese residents of foreign nationality, and 5 cases of Secondary Syphilis all occurring in Maltese residents.
FIGURE 10
Incidence rate of Chlamydia in Malta, 2000-2008

FIGURE 11
Incidence rate of Gonorrhoea in Malta, 2000-2008
TOXOPLASMOSIS

There were no reported cases in 2008.

TUBERCULOSIS

Over the last decade or so, Malta has persistently had one of the lowest incidence rates of Tuberculosis globally. In 2007, the incidence rate of all forms of tuberculosis was 9/100,000. This is down from 11/100,000 in 1990. The incidence rate in Malta is below that of most other neighbouring European and North African countries.

The pattern of TB has changed significantly in recent years however. Until 2002-03, most of the cases diagnosed involved elderly persons with reactivation of old disease and a small proportion of foreigners. Since the start of mass landings of asylum seekers from Eastern Africa, the proportion of foreigners has increased significantly, from 3 cases in 2003 to 22 in 2007. In 2008 there were 65 cases of Tuberculosis notified. This is an increase of 97% over the previous year and reflects the increase in arrivals in irregular immigrants during 2008 and the enlarging local community of persons born in high prevalence countries.

The cases of Tuberculosis were as follows:

- 15 pulmonary TB cases in Maltese nationals
- 33 pulmonary TB cases in foreign nationals (29 asylum seekers)
- 5 extra-pulmonary TB cases in Maltese nationals
- 12 extra-pulmonary TB cases in foreign nationals (9 asylum seekers)
As in previous years, the majority of TB cases were among foreigners (45), and among these irregular migrants were the predominant group (38). This reflects the growing community of persons in Malta coming from high incidence countries. The number of cases among people born in Malta has remained stable. These numbers are provisional and could change following the receipt of further laboratory data.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pulmonary Tuberculosis</th>
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<td></td>
<td>Residents</td>
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<td>14</td>
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<td>2008</td>
<td>15</td>
<td>33</td>
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</table>

Table 4: Number of reported cases of Tuberculosis in Malta, 1998-2008

**TYPHUS**

Cases of both Murine and Tick-borne typhus are still being reported regularly, most commonly during the summer months.

**FIGURE 13**

Murine Typhus, Malta, 1990-2008
During 2008 there were eight reported cases of Murine Typhus and three reported cases Tick-borne Typhus.

<table>
<thead>
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<th>Year</th>
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<th>Female</th>
<th>Total</th>
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<td>3</td>
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</table>

Table 5: Number of reported cases of Murine and Tick-borne Typhus, 2003-2008
BACKGROUND

Scarlet fever, known as Skarlatina in Maltese develops after infection with particular strains of gram-positive β-haemolytic Group A *Streptococcus pyogenes* that produce an erythrogenic exotoxin. The bacterium causes a throat infection with fever associated with a rash, once the toxin is disseminated in the blood stream.

Scarlet fever was a dreaded disease in the past with a high rate of complications and death. In fact many people still remember that in the post-war era Sir Paul Boffa Hospital had a ward specifically dedicated for patients with scarlet fever. Nowadays, with the use of antibiotics, scarlet fever is a simple throat infection, associated with a rash. It is estimated that 5-15% of normal individuals are carriers and harbour *S. pyogenes* in their throat, without having any symptoms whatsoever.

EPIDEMIOLOGY

*Streptococcus pyogenes* is carried in the mouth and nasal fluids and is transmitted through droplet infection from an infected person when he coughs or sneezes. Streptococcal pharyngitis largely affects young children and therefore scarlet fever is common in these age groups, while adults may suffer a throat infection with no associated rash, as most adults would possess neutralising antitoxin antibodies.
On a yearly basis Malta has had a few notified cases of Scarlet fever, especially in the winter periods over the previous three decades before 2008. However during 2008 the illness has made an unprecedented reappearance on the Maltese Islands. It is thought that the main reason for the increased frequency of Scarlet fever has been due to the introduction of a new strain of *S. pyogenes* in the community. A particular rise in scarlet fever was seen in the Gozitan community in 2008; whereas a similar rise occurred on the island of Malta in 2009.

In addition it is thought that this led to a greater awareness of the infection amongst physicians, increasing laboratory testing as well as increasing surveillance by the Infectious Disease Prevention and Control Unit. These facts may have partly contributed to an increasing number of notifications. The infection has also created a degree of emotional fear of a previously dreaded disease within the Maltese community especially in parents of young children.

It should also be noted that a resurgence of scarlet fever infections have also been noted in many other countries in Europe over the same period of time such as the United Kingdom; regular surveillance in these countries has shown a periodic upsurge and waning of scarlet fever cases.

In fact the Infectious Disease Prevention and Control Unit investigated 70 cases of probable or confirmed cases of Scarlet Fever reported during 2008.

**SYMPTOMS AND SIGNS**

Scarlet fever begins with a sore throat with associated fever, a headache and vomiting. Typically an erythematous, blanching rash (whitens on pressure) that shows up as tiny red pimples (punctate) with a sand paper-like texture develops within 1-2 days. It usually begins on the neck and chest and may spread rapidly to involve the whole trunk and may involve the arms and legs as well. The rash may appear in the axillae and/or groin, as red streaks called pastia’s lines. The rash does not affect the palms and soles. This rash can last 2-7 days and skin desquamation (peeling) of the fingers and toes and sometimes of the rest of the body including the face and neck may occur a number of days after the rash disappear.

The characteristic signs of scarlet fever are:

1. Skin rash as described above
2. Flushing of the cheeks with paleness around the mouth (perioral pallor)
3. A whitish coating on the tongue which may change into a red and bumpy ‘strawberry tongue’
4. Desquamation of the skin in convalescence.

Other common signs of scarlet fever are:

5. Swollen lymph nodes in the neck
6. Nausea and vomiting
7. Loss of appetite
8. Headache
9. Chills
10. Some cases might have a mild itch

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1 Documented evidence in the Infectious Disease Prevention and Control Unit show an average of 1.2 notified cases per year over the previous 32 year period.
2 Scarlet fever outbreaks in two nurseries in Southwest England, Eurosorveillance; Volume 11, Issue 9, 02 March 2006; M Hoek et al.
Cases of scarlet fever reach highest level for a decade, Mail on Line, 17th February 2009;
The return of Scarlet Fever, cases in Britain rise by 50% in just a year; The Independent, 29th March 2009.
3 Pastia’s lines or sign is named after Constantin Chessec Pastia, a Romanian Physician, 1883-1926
The incubation period, i.e. the time period from exposure to the bacteria to the clinical development of symptoms is short, usually 1-5 days.

**CASE DEFINITIONS**

Cases are classified in two ways:

**Confirmed case** – where a patient has clinical symptoms consistent with streptococcal sore throat (pharyngitis and fever) and at least one characteristic sign of scarlet fever and a positive laboratory isolate of Group A *Streptococcus pyogenes* (although confirmation of the Beta-haemolytic capacity of the pathogen would ideally be required).

**Probable case** - where a patient has clinical symptoms consistent with streptococcal sore throat and at least one characteristic sign of scarlet fever and no throat swab was performed or the throat swab was performed but had no specific growth.

**FIGURE 15**

**Notified Scarlet fever cases in the Maltese Islands in 2008**

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of cases</th>
</tr>
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<tbody>
<tr>
<td>Jan</td>
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<tr>
<td>Nov</td>
<td>1</td>
</tr>
<tr>
<td>Dec</td>
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</tr>
</tbody>
</table>

**TREATMENT**

All those with suspected or confirmed scarlet fever are treated with a ten day course of a penicillin-based antibiotic, or an alternative for those who may be allergic to it. Anti-pyretics and fluids should be given accordingly. Affected children should be kept home until free from fever.

The mean age of notified scarlet fever cases was 14.5 yrs, the mode 5 yrs and the age range was 1 – 61 years. A total of 70 cases of scarlet fever (13 confirmed; 57 probable) were notified during 2008 with 87% occurring in the 2 – 14 age groups. Within this age group almost 65% occurred in the young ages of 2-5 years. The age of eight young children was not known.

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4 Epidemiological features and control of an outbreak of scarlet fever in a Perth primary school, Australia; Communicable Diseases Intelligence, Volume 29, Issue No. 4-December 2005.
In all the Infectious Disease Prevention and Control Unit had investigated 79 notified cases of scarlet fever during 2008 with 6 being excluded on clinical and investigative grounds. Three probable cases with very typical symptomatology were investigated at the beginning of the year. These cases occurred during the last week of December 2007 and marked the start of the spate of scarlet fever in Gozo in 2008.

All children with the exception of three were attending primary school. During 2008 65.7% of scarlet fever cases occurred in Gozo and 27% in Malta whereas there were 5.7% of the notified cases whose address was not known. One case is thought to have been imported from Australia.

Although cases of the infection were repeatedly reported from some of the primary schools in Gozo, only a small number of school clusters were reported during the first few months of 2008 involving a few pupils within the same class. No major outbreaks were noted in these schools and most of the cases within the same schools were reported either from different classes or school years or else the dates of onset were not related to each other and therefore not epidemiologically linked suggesting that community transmission rather than class/school transmission of the infection was more likely.

There were also two small clusters linking sibs, one involving 3 young children and the other two. In both cases the parents were not affected. All cases have recovered with no complications.