

Communicable Disease Report

Introduction of single use instruments to reduce possible risk of nosocomial transmission of variant CJD

In response to the possible risk of nosocomial transmission of variant Creutzfeldt-Jakob disease (vCJD), the Government has made available £200million to modernise National Health Service decontamination and sterilisation facilities, and has recommended the introduction of single use instruments for tonsillectomy during 2001(1). In 2000 all hospitals were asked to review their sterile supply services, the process to be completed by March 2001, and bring the results together into regional modernisation plans(2). One reason for these initiatives is the theoretical risk of patient to patient transfer of variant through surgical instruments. Although no cases of such transmission are known, this is precautionary step to minimise the possibility of nosocomial transmission of vCJD.

The introduction of single use instruments for tonsillectomy follows advice from the Spongiform Encephalopathy Advisory Committee (SEAC), informed by a risk assessment report of relative levels of preclinical vCJD infectivity theoretically possible within various body tissues. Prions have, for example, been found in the tonsil tissue of people who have died of vCJD. When SEAC endorsed the report it stated that where discrete surgical procedures can be identified as suitable for single use instruments, for example tonsillectomy, and provided that patient safety would not be compromised, such use should be considered wherever practicable.

The Department of Health has already carried out preparatory work with ear, nose, and throat surgeons, and tested instruments for single use, which should enable their rapid introduction. The experience gained from working with single use instruments in tonsil surgery should be useful if it is decided to introduce them on a wider basis.

There are a number of other relevant Health Service Circulars which readers may wish to consult on this topic: Health service Circular (HSC) 1999/179 *Controls Assurance in Infection Control: Decontamination of Medical Devices*; HSC 1999/178 (August 1999) *Variant Creutzfeldt-Jakob Disease (vCJD): Minimising the risk of transmission*. Guidance was also produced in April 1998 by the Advisory Committee on Dangerous Pathogens (ACDP)/SEAC Joint Working Group(3). This guidance emphasised procedures that must be followed to ensure optimum clinical care and management of patients with CJD of any type.

1. Department of Health. *£200 million for NHS equipment to protect patients against variant CJD risk. (press release)*. London: Department of Health, 2001.
2. Department of Health. *Decontamination of medical devices. (Health Service Circular 2000/032)*. London: Department of Health, October 2000.
3. ACDP/SAC. *Transmissible spongiform encephalopathy agents: safe working and the prevention of infection*. London: The Stationery Office, 1998. (ISBN 0-11-322166-5)

Health Service Circulars and press releases are available on the Department of Health Website at www.doh.gov.uk/publications/coinh.html

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Ciprofloxacin as a chemoprophylactic agent for meningococcal disease – low risk of anaphylactoid reactions

Ciprofloxacin is recognised as a useful chemotherapeutic agent in reducing meningococcal carriage¹, and is recommended as an alternative agent to rifampicin for chemoprophylaxis of adult contacts of meningococcal disease². Although not licensed for this use, ciprofloxacin has a number of advantages over rifampicin. It is given as a single dose (500mg), it does not interact with oral contraceptives, and it is more readily available in community pharmacies. Ciprofloxacin may, however, cause serious allergic reactions³. When used as a chemoprophylactic agent for meningococcal disease, anaphylactoid reactions have been reported in about 1 in 1000 treated individuals (Monk, unpublished data). None of these reported reactions has been fatal.

The PHLS Meningococcus Forum considers that ciprofloxacin should remain as an alternative to rifampicin for chemoprophylaxis of meningococcal disease. Health care staff should, however, be aware of the potential for allergic reactions after giving ciprofloxacin. Information sheets should include the risk of side-effects such as facial swelling, tightness in throat or breathing difficulty, and advise the need for urgent medical attention if these symptoms develop.

1. Gaunt PN, Lambert BE. Single dose ciprofloxacin for the eradication of pharyngeal carriage of *Neisseria meningitidis*. *J Antimicrob Chemother* 1988; **21**: 489-96.
2. PHLS Meningococcal Infections Working Group and Public Health Environmental Group. Control of meningococcal disease: guidance for consultants in communicable disease control. *Commun Dis Rep CDR Rev* 1995; **5**: R189-9.
3. Davis H, McGoodwin E, Reed TG. Anaphylactoid reactions reported after treatment with ciprofloxacin *Ann Intern Med* 1989; **111**(12): 1041-3
4. Burke P, Burne SR, Cann KJ. Allergy associated with ciprofloxacin. *BMJ* 2000; **320**: 679.

Cutaneous diphtheria acquired in the Gambia

A case of cutaneous diphtheria has been reported in a 44 year old woman who returned to the United Kingdom (UK) from a holiday in the Gambia at the end of November. A toxigenic strain of *Corynebacterium diphtheriae* var *mitis* was isolated from a swab, taken three weeks after her return, from a wound on her big toe. The patient is thought to have had her primary vaccinations and received a booster dose of diphtheria vaccine after confirmation of toxigenic *C. diphtheriae*.

The patient is a diabetic and was treated initially with flucloxacillin and then metronidazole, but failed to respond until given azithromycin. She is now well and the lesion has healed. All close contacts were offered vaccination and some were offered antibiotic prophylaxis.

This is the first isolate of a toxigenic strain of *Corynebacterium diphtheriae* in the UK since 1998¹. Between 1993 and 1998, 13 cases of infection due to imported toxigenic strains of *C. diphtheriae* were identified in England and Wales. Seven of these had cutaneous lesions and were imported from the Indian-subcontinent and Africa. Three further isolates were identified from throat swabs taken from asymptomatic contacts of two cutaneous cases. Cutaneous lesions are a major source of diphtheria in tropical countries, and although they are less likely to give rise to toxic symptoms than pharyngeal infections, cutaneous diphtheria is readily transmissible to close contacts who should be given prophylaxis according to published guidelines^{2,3}.

1. CDSC. Diphtheria in visitors to Africa. *Commun Dis Rep CDR Wkly* 1998; **8**: 289.
2. Bonnet JM, Begg NT. Control of diphtheria: guidance for consultants in communicable disease control. *Commun Dis Public Health* 1999; **2**: 242-9.
3. Begg NT. *Manual for management and control of diphtheria in the European Region*. Copenhagen: World Health Organization, 1994.

Enhanced surveillance of *Mycobacterium bovis* disease in humans in England and Wales from January 2001

Since 1993, cases of human infection with *Mycobacterium bovis* have been reported via Mycobnet (UK Mycobacterial Resistance Network), which collates information on all positive cultures of the *M. tuberculosis* complex from mycobacterial reference centres.

Between 1993 and 1999, annual reported case numbers have always been over 20 but rarely exceeded 35 for England and Wales, with a maximum of 37 (in 1993). Equivalent case numbers for the UK as a whole were between 30 and 50, maximum 49 (in 1994). Around 75% patients were aged 50 years or over (7% were of unknown age).

There is an increasing incidence of herd breakdown (tuberculin skin test reactivity with or without evidence of disease) in cattle, which is currently most apparent in the South West and West Midlands regions¹. Enhanced surveillance of *M. bovis* in humans commenced in 1998 with information sought retrospectively on cases from 1993 onwards² with the aim of investigating risk factors for transmission of *M. bovis* to humans.

The existing enhanced surveillance system does not trigger data collection in a sufficiently timely manner, nor does it seek to gather sufficiently comprehensive data. A revised system is therefore being introduced from 2001, with the aim of improving both the timeliness and relevance of data collected.

System from January 2001

On confirmation of an isolate as *M. bovis*, mycobacterial reference laboratories will liaise with colleagues at the referring laboratory to establish the health authority in which the patient is resident, and the clinician responsible for care of the patient. Mycobacterial reference laboratories will send a questionnaire to the relevant consultant in communicable disease control (with pre-paid return envelope). The reference laboratory will also inform the Tuberculosis Section at the PHLS Communicable Disease Surveillance Centre (CDSC) of the case, and confirm they have sent the questionnaire. If the reference laboratory is unable to establish the patient's health authority of residence, the tuberculosis section will attempt to do this, and issue the questionnaire. Completed questionnaires should be returned to the tuberculosis section at CDSC, which will continue to collate data.

Mycobnet data supplied by reference laboratories will be reviewed at CDSC to identify any cases for which questionnaires have not been issued. Colleagues in Scotland and Northern Ireland will be invited to participate in the system.

Although quite detailed information is to be sought, it is hoped that the revised system will enable more timely, and hence easier, collection of data. Also, in view of the small numbers of cases seen annually, the additional burden on any individual should be relatively small.

1. Ministry of Agriculture Fisheries and Food. 2000. <www.maff.gov.uk/animalh/tb/default.htm>
2. CDSC. Enhanced surveillance of *Mycobacterium bovis* in humans. *Commun Dis Rep CDR Wkly* 1998; **8**(32): 281,4.

CDR Weekly on-line

Welcome to the electronic *CDR Weekly*. You will find that its appearance reflects that of the old paper *CDR*, and will be following the same four-weekly cycle of subject matter. The first week of the month will present data on respiratory tract infections, animal associated infections and imported infections; the second gastrointestinal illnesses; the third bacteraemias and MRSA, and the fourth immunisable diseases and HIV. Data on sexually transmitted diseases will be published on the fifth week of five-week months.

For the first month the presentation of data will follow that used previously, so as to complete the data tables for 2000. Pages for all sections are in place, but some will remain empty until we reach the appropriate week in the cycle. There is information at the top of each page showing when it was last updated, and when each update is due.

In February we will begin revised presentations, with more focused information on different diseases and conditions. The reporting frequency for some conditions will also change to reflect their relative importance. Information on forthcoming meetings and workshops will appear in the diary section. Notifications of infectious diseases will no longer be published as part of *CDR Weekly* but will appear separately on the PHLS website. Click on the link at the foot of our home page to get to there.

As with any new development there will be a steady stream of minor improvements over the coming weeks. We therefore particularly welcome any feedback on the presentation and content of *CDR Weekly*, which should be emailed to the deputy editor <nhough@phls.org.uk>.

Mycobacterial reporting in 2001

The following tables are presented to complete the figures for the year 2000:

Mycobacterium tuberculosis infections, England and Wales: laboratory reports

Opportunist mycobacterial infections, England and Wales: laboratory reports

In the future, data on mycobacterial infections will be published on a quarterly basis by the PHLS Communicable Disease Surveillance Centre from a wider range of sources than previously. The following regular tables are planned:

Numbers of reports of tuberculosis received through the Enhanced Surveillance system by NHS region, age and sex of patient, and disease site (pulmonary or extrapulmonary). The equivalent numbers of statutory notifications (from CDSC NOIDS database) will also be tabulated.

Numbers of initial isolates of *M. tuberculosis* complex received through the Mycobnet system (UK Mycobacterial Resistance Network) by NHS region, total number of isolates, and number of isolates resistant to isoniazid and/or exhibiting multidrug resistance (resistance to isoniazid

and rifampicin with or without other resistance).

Laboratory reports of opportunist mycobacterial infections. This table will be similar to the original *CDR Weekly* format.

These tables will contain data for England and Wales and will be provisional. While the table of laboratory reports of opportunist mycobacteria will continue to show numbers up to the week preceding publication, the two tables relating to tuberculosis will contain data three months in arrears (for example, issue 14 will contain figures for the last quarter of 2000). This time lag is necessary to allow receipt of data, deduplication of records, and other preliminary validation processes.

Laboratory reporting of mycobacterial infections

In light of the development of an improved reporting system (LabBase2), and the evolution of the *CDR Weekly* as an exclusively electronic journal, revised guidelines for reporters have been drafted. Reporters will receive these guidelines shortly. They may, however, be viewed at the end of this weeks CDR.

Mycobacterium tuberculosis infections, England and Wales: laboratory reports, weeks 48-52/00

	Number of reports received				Cumulative totals for weeks 01 - 30	
	Male	Female	Not stated	Total	2000	1999
<i>M. tuberculosis</i>						
All cases (disseminated)	92 (4)	88 (3)	10 (-)	190 (7)	1190 (2)	1418 (4)
Site of isolate*						
pulmonary (smear positive)	64 (22)	46 (15)	6 (2)	116 (39)	1202 (283)	1301 (346)
lymph node	4	8	2	14	133	147
CNS (meningitis)	1 (1)	- (2)	-	1 (1)	21 (19)	32 (30)
genitourinary	3	3	-	6	56	76
bone/joint (spinal)	2 (1)	-	-	2 (1)	20 (8)	34 (10)
gastrointestinal/peritoneal	2	3	-	5	32	34
non-pulmonary respiratory	1	2	1	4	91	118
abscess	6	5	1	12	144	159
other or unspecified	9	21	-	30	324	528
<i>M. bovis</i>	-	-	-	-	11	23

* The number of isolates may exceed the number of cases, as cases may have disease at more than one site

Opportunist mycobacterial infections, England and Wales: laboratory reports, weeks 48- 52/00

	Number of reports received				Annual totals	
	Male	Female	Not stated	Total	2000	1999
<i>Avium-intracellulare</i> group	9	8	2	19	303	328
Site of isolate*						
pulmonary	7	7	1	15	218	201
lymph node	2	–	–	2	6	14
blood	–	1	–	1	21	17
other	–	–	1	1	62	99
<i>M. malmoense</i>	5	2	–	7	119	127
Site of isolate*						
pulmonary	5	2	–	7	100	90
lymph node	–	–	–	–	–	5
other	–	–	–	–	18	32
<i>M. kansasii</i>	6	2	–	8	103	116
<i>M. xenopi</i>	5	–	–	5	40	56
Other species†	4	1	–	5	21	35

* The number of isolates may exceed the number of cases, as cases may have disease at more than one site

† *M. marinum* 5; *M. scrofulaceum* 1

Respiratory tract infections, England and Wales: laboratory reports, weeks 48-52/00

	48/00	49/00	50/00	51/00	52/00	Totals 48-52/00
Respiratory chlamydia	6	9	5	5	0	25
<i>Coxiella burnetii</i>	1	1	0	0	0	2
Legionella	9	3	1	5	3	21
<i>M. pneumoniae</i>	35	10	4	6	0	55
Adenovirus	65	25	14	23	7	134
Coronavirus	0	0	0	0	0	0
Influenza A	13	9	1	10	3	36
Influenza B	1	4	1	3	0	9
Parainfluenza	11	6	3	3	2	25
RSV virus	599	636	414	761	230	2640
Rhinovirus	6	7	3	3	0	19

Adenovirus (excluding types 40, 41, group F, EM faeces): 71 patients had eye infections, three bronchiolitis, and four pneumonia. M 21y had glandular fever; male (age unknown) febrile convulsions; F 7m sepsis; F 21y cystic fibrosis.

Coronavirus: no cases were reported.

Influenza A: 36 cases were reported. Five patients had pneumonia. Northern and Yorkshire region reported 12 cases, Trent nine, and West Midlands five. Thirty per cent of cases were aged between 45 and 64 years.

Influenza B: nine cases were reported. M 65y had recently travelled abroad. West Midlands region reported four cases and South West three.

Parainfluenza (type 1, 12; type 2, 0; type 3, 7): 25 cases were reported. Two patients had bronchiolitis. Northern and Yorkshire and West Midlands regions reported five cases each, Trent and South West four each, and Eastern three. Fifty-two per cent of cases were aged less than one year.

Respiratory syncytial virus: 2,640 cases were reported. Four patients had pneumonia and 867 bronchiolitis. M 1y had asthma; M 2y chronic lung disease; M 57y and F 9m impaired immunity; M 67y chronic obstructive pulmonary disorder. Eastern region reported 579 cases, West Midlands 564, Trent 436, Northern and Yorkshire 411, and South West 296. Sixty-six per cent of cases were aged less than one year.

Rhinovirus: 19 cases were reported. West Midlands region reported eight cases, Trent four, South West three, and London two. Fifty-two per cent of cases were aged less than one year.

Respiratory chlamydia (*C. psittaci*, 14; *C. pneumoniae*, 3; *Chlamydia sp.*, 8): seven patients had pneumonia. M 33y had recently travelled abroad and M 57y and M 62y both had contact with birds.

***Coxiella burnetii*:** two cases were reported. M 78y had acute hepatitis.

Legionella: 21 cases were reported (17 males aged between 34 and 76 years, and four females aged between 40 to 76 years), eighteen of whom had pneumonia. Two cases, M 51y and M 53y, died. Fifteen cases were associated with travel abroad: Spain 4, Greece 2, Italy 2, Malta 2, United States 2, France 1, Kenya 1, and Turkey 1.

Mycoplasma pneumoniae: 11 patients had pneumonia. M 1w had Stevens-Johnson syndrome. Northern and Yorkshire region reported 25 cases, South West 13, and Eastern 9. Forty-nine per cent of cases were aged between 15 and 44 years.

Common animal associated infections, England and Wales: laboratory reports, weeks 48-52/2000

Organism	Total reports for weeks 48-52 2000*		Cumulative totals for weeks 0-52	
	1999	2000*	1999	2000*
<i>Borrelia burgdorferi</i> ^{1,2}	7	77	158	315
<i>Leptospira hardjo</i> ^{1,3}	1	3	3	8
<i>Leptospira icterohaemorrhagiae</i> ^{1,3}	3	-	23	6
<i>Leptospira other</i> ^{1,3}	1	4	15	35
<i>Pasteurella haemolytica</i>	-	-	2	3
<i>Pasteurella multocida</i>	17	16	235	217
<i>Pasteurella pneumotropica</i>	-	1	3	3
<i>Pasteurella spp.</i>	3	6	49	55
<i>Toxocara canis</i>	-	-	-	3
<i>Toxocara cati</i>	-	-	-	-
<i>Toxocara spp.</i>	-	2	8	7
<i>Toxoplasma gondii</i>	3	4	98	38
<i>Toxoplasma spp.</i>	4	6	68	54

* Provisional data

1 By specimen date

2 Lyme disease Reference Laboratory and CDSC

3 Leptospira Reference Laboratory and CDSC

Common imported infections, England and Wales: laboratory reports, weeks 48-52/2000

Organism	Total reports for weeks 48-52 for weeks 48-52 2000*		Cumulative totals for weeks 0-52	
	1999	2000*	1999	2000*
Arbovirus	-	-	-	2
Dengue virus	1	-	21	4
<i>Ascaris spp.</i>	6	11	137	118
Hookworms (unspecified)	4	5	70	66
<i>Leptospira spp.</i>	-	1	7	15
<i>Ancylostoma duodenale</i>	-	-	-	-
<i>Necator americanus</i>	-	-	1	-
<i>Hymenolepis diminuta</i>	-	-	1	1
<i>Hymenolepis nana</i>	1	-	21	22
<i>Hymenolepis spp.</i>	-	1	-	1
<i>Schistosoma haematobium</i>	3	-	81	56
<i>Schistosoma intercalatum</i>	-	-	1	-
<i>Schistosoma mansoni</i>	3	-	18	12
<i>Schistosoma spp.</i>	-	-	48	35
<i>Strongyloides stercoralis</i>	4	-	34	15
<i>Strongyloides spp.</i>	1	-	10	4

* Provisional data

Mycobacterial infections – guidelines for reporters

J Herbert, JM Watson

Background

PHLS and NHS laboratories in England and Wales process clinical specimens for the diagnosis of mycobacterial infections, and send isolates for species identification and drug sensitivity testing to a mycobacterial reference centre (PHLS Mycobacterium Reference Unit Dulwich, PHLS Regional Centres for Mycobacteriology Birmingham, Cardiff, and Newcastle, and Royal Brompton Hospital). The source laboratories are asked to report, on a voluntary basis, **clinically significant** mycobacterial infections to the PHLS Communicable Disease Surveillance Centre (CDSC). Reports are collated by the Tuberculosis Section at CDSC.

Information on reported mycobacterial infections has previously been published in the form of summary tables in the *CDR Weekly* every 8 weeks. Guidelines for reporting were last published in 1995¹. With the development of an improved laboratory reporting system (LabBase2), and the evolution of the *CDR Weekly* as an electronic journal, a revision of the reporting guidelines is timely. This guidance has been drafted on the basis of advice received from the PHLS Mycobacteriology Forum.

Guidance for reporting mycobacterial infections to CDSC

Identification and confirmation:

- Reports of mycobacterial infections should include characterisation to species level. Reports of *Mycobacterium sp* will not be retained in the CDSC database. Mycobacterial species should be confirmed by a mycobacterial reference centre. All reports of mycobacterial infection should indicate the reference laboratory which confirmed the identification.

Clinical significance:

- Isolates should be reported only if considered clinically significant. Isolates of *M. tuberculosis* complex should therefore be reported automatically. Similarly, isolates

of *M. malmoense* may always be treated as clinically significant unless there is specific evidence to the contrary.

- Isolations of certain species from specific anatomical sites are recognised as having inevitable clinical significance and will thus be accepted automatically (see table). Other mycobacteria may occur commonly in the environment, and their isolation from a clinical specimen may be of doubtful significance². Given the comparative rarity of such isolations, CDSC will routinely follow up reports of mycobacteria, other than those meeting the site/species criteria in the table, to confirm clinical significance.

Initial and subsequent isolates:

- Reports of initial isolates will be accepted. Subsequent isolates of *M. tuberculosis* complex from the same patient should only be submitted if the specimen was taken more than 1 year after the specimen that yielded the initial isolate. For other mycobacteria, more than 5 years should have elapsed between the specimen that yielded the initial isolate and a subsequent isolate of the same organism.

Mycobacterium bovis

- Reports of *M. bovis* isolates have proved problematic in the past. Isolates should only be reported following final confirmation of species by the reference centre.

BCG

- Reports of isolates of the BCG strain (derived from a wild strain of *M. bovis*) should be submitted as '*M bovis* – BCG strain', as opposed to all other isolates of *M. bovis*, which should be submitted as '*M. bovis* – non BCG strain'.

Follow-up of reports

- Follow-up of reports will be by means of a standard letter and short form, sent to the Consultant Microbiologist at the reporting laboratory.

Definitions

Infections are classified according to the site or type of specimen from which the organism was isolated.

- **Pulmonary:** infection involving the lung parenchyma or bronchial tree below the larynx. Specimens include sputum, broncho-alveolar lavage fluid, bronchial secretions, lung tissue and gastric washings/aspirate.
- **Non-pulmonary:** infection involving any site other than the lung parenchyma or bronchial tree. This includes respiratory non-pulmonary infections and infections in which the site of disease is not stated. Non-pulmonary infections are further divided into categories according to the tissue or organ system that is involved.

Main changes

- Clearer definitions of specimen types relating to mycobacterial species which will be accepted as clinically significant, and those reports requiring further follow-up.
- Reports of *Mycobacterium avium intracellulare* will require follow-up to confirm clinical significance except where the criteria for acceptance (Table) are fulfilled.
- Specific arrangements have been made for the reporting of BCG isolations.
- Minor amendment to definition of disseminated infection.

Mycobacterial species	Sites from which isolates will be accepted as clinically significant
<i>M. tuberculosis</i> <i>M. bovis</i> <i>M. africanum</i> <i>M. malmoense</i>	All
<i>M. avium intracellulare</i>	Blood Lymph node Pulmonary if patient is aged over 60 years or immunocompromised
<i>M. kansasii</i> <i>M. xenopi</i> <i>M. szulgai</i> <i>M. simiae</i>	Pulmonary
<i>M. marinum</i> <i>M. fortuitum</i> <i>M. abscessus</i> <i>M. ulcerans</i> <i>M. chelonae</i> <i>M. haemophilium</i>	Skin / soft tissue
<i>M. scrofulaceum</i>	Lymph node
<i>M. paratuberculosis</i>	Intestinal

- **Lymph node:** isolates from lymph nodes where the site is not indicated as one of the following categories. If information is provided which allows classification to one of the above categories, that category will be counted in preference to abscess.
- **Central nervous system (CNS):** isolates from CNS specimens, including meningitis cases.
- **Genitourinary system:** isolates from urine, kidney, ureter, bladder, and the reproductive organs.

- **Bone/joint:** isolates from bone, bone marrow, joints or synovial fluid or biopsy, including spinal isolates.
- **Gastrointestinal/peritoneal:** isolates from the digestive tract and associated organs, faeces, ascitic fluid, peritoneal fluid or biopsy or any organ contained within the peritoneal cavity, including pelvic abscesses. Gastric washings/aspirates are excluded from this category, as they are considered to be pulmonary isolates.
- **Non-pulmonary respiratory:** isolates from pleural fluid or biopsy, upper respiratory tract (larynx and above) and intrathoracic lymph nodes.
- **Abscess:** isolates from abscess, sinus or pus, where the site is not indicated as one of the above categories. If information is provided which allows classification to one of the above categories, that category will be counted in preference to abscess.
- **Other:** isolates from any specified sites not listed above, or from an unspecified site.
- **Disseminated infections:** Disseminated infection is indicated by an isolate from blood, **or** isolates from two or more non-contiguous organ systems.

References

1. Dedman D, Watson J. Mycobacterial infections: guidelines for reporting and revised format for presentation. *Commun Dis Rep CDR Rev* 1995; 5(2): R27-8.
2. Subcommittee of the British Thoracic Society. Management of opportunist mycobacterial infections: Joint Tuberculosis Committee guidelines 1999. *Thorax* 2000; 55: 210-8.

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