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Contents:

VIRUS REPORTING SCHEME A total of 1,510 reports were processed for this period.

Thirteen cases of Q fever were reported (1 from New South Wales, 2 from Victoria, 2 from South Australia, 7 from Queensland and 1 from Western Australia). Occupational exposure data were only available for 4 Queensland cases, 3 male meatworkers aged 21, 31 and 41 respectively and a 46 year old male farmer. None of these patients were involved in the Q fever vaccine trial conducted in South Australia.

Rotavirus was isolated from the faeces of two immunosuppressed males aged 36 and 37 who presented with gastro-intestinal symptoms including watery diarrhoea.

Three hundred and two cases of Ross River virus were reported, 7 from New South Wales, 9 from Western Australia, 46 from Victoria and 240 (combining two reporting periods) from Queensland.

TUBERCULOSIS AT AN ARMY BASE IN THE UK

Based on CDR (1986) 86/12 3-4

An outbreak of tuberculosis has recently been reported at an army base in the United Kingdom. There were two index cases, both family members of army personnel. Epidemiological and follow up studies involving Service personnel and their families, which constitute a highly mobile population, presented some difficulties.

Index case 1 On 31 March 1985, Mrs A, a 23 year old mother of two, was admitted to hospital with pyrexia of unknown aetiology. She had been unwell since December 1984 but had not sought medical advice because she feared she might have cancer.

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She was transferred to the chest unit on 2 April with a confirmed diagnosis of pulmonary tuberculosis, with smear positive sputum. Chemotherapy was commenced with rifampicin 450 mg, ethambutol 600 mg, pyrazinamide 500 mg and isoniazid 300 mg daily, supplemented with pyridoxine 20 mg per day, but she had a cardiac arrest and died on 6 April. Post mortem examination showed extensive cavitating tuberculosis of both lungs.

Index case 2 On 3 April 1985, child B, the 4 year old son of Mrs A's next door neighbour was admitted to another hospital in the district with a chest X-ray suggestive of miliary tuberculosis. It is not known whether sputum was examined. Treatment was commenced with rifampicin 250 mg, pyrazinamide 200 mg and isoniazid 125 mg per day, supplemented with pyridoxine 20 mg per day. He was discharged well on 3 May 1985.

Epidemiology Army and civilian medical officers cooperated in the subsequent tracing and follow-up of contacts.

From January 1982 to November 1984 the army unit concerned had been posted to Northern Ireland. For security reasons, army personnel and their dependents spent most of their spare time in each others' company rather than with the local population. This had continued on their return to England because the base was geographically isolated.

A list of all known close contacts of the two cases during the preceding three months was prepared. A more liberal interpretation of the term 'contact' was made than was usual in view of the emotional circumstances surrounding Mrs A's death. The list included family members of both cases, relatives that the families had stayed with, relatives who had visited Mrs A in her home town, close friends of both families, and school friends of child B.

The contact list consisted of 145 persons; 31 serving soldiers, 29 wives and 50 children of army personnel, 29 civilian relatives and friends in other areas of the country, and 6 close contacts of child B at the local primary school who were not 'army' children. Special screening sessions were arranged at the chest clinic. Contacts under the age of 12 years were Heaf tested and arrangements made to repeat this after 3 months. Contacts who were 12 years and over had chest X-rays taken, with a repeat X-ray after six months. Details of contacts living outside the area were sent to health authorities in the area of residence for screening to be undertaken. The lists were drawn up by medical orderlies at the base under the direction of the army Medical Officer and after consultation with civilian medical officers.

In the process of compiling a list of contacts, investigators became aware of family C who were close friends of Mrs A. Mrs C had been diagnosed as suffering from pulmonary TB in April 1982, and had received 18 months chemotherapy. Her 4 year old son who had been investigated as a contact of his mother, was found to have active pulmonary tuberculosis and had received one year of chemotherapy. Both had been discharged from follow-up in March 1984. Mrs C had a daughter in 1983 who was given BCG in the neonatal period.

Results of contact tracing: Heaf tests were performed on all 56 children. There were three positive results. Two of these were the children of Mrs C, whose Heaf tests were graded as 3 and 2 respectively. The other positive result (case 3) was in an 18 month girl whose chest X-ray and physical examination were entirely normal but who started on chemoprophylaxis on account of her grade 4 Heaf test. This child's family had been particularly close friends of Mrs A.

X-rays were taken of 60 adults, and all but two were reported as normal. One of the two was Mrs C's X-ray but comparison with previous X-rays showed no change since completing chemotherapy in 1983. The other abnormal X-ray was that of Mrs C's husband (case 4). He had been under surveillance since March 1982, after tuberculosis had been diagnosed in his wife and son. He had had a chest X-ray in March 1984 in which no active pulmonary lesion was seen. He now reported a three week history of non-productive cough but was otherwise well. He was admitted to the chest unit and open pulmonary tuberculosis was confirmed 29 April.

As a result of this new case of smear positive pulmonary tuberculosis in a man whose work involved close personal contact with a number of other soldiers, a further list of 36 contacts was drawn up and each was X-rayed, the result being normal in every case.

All 29 contacts of Mrs A in other areas were traced and examined locally. The two young daughters of Mrs A were both Heaf positive grade 3/4 with normal chest X-rays and both were prescribed anti-tuberculosis drugs for three months (cases 5 and 6). All the other contacts were normal. All were given or had previously had BCG.

Follow up. Service and civilian medical officers cooperated in follow up screening, which revealed one further child (case 7) aged 17 months, who was Heaf positive, grade 4. She was treated with rifampicin 100 mg and isoniazid 100 mg per day, supplemented with pyridoxine 10 mg per day. Mrs A frequently baby-sat with this child and the families were close friends. No other cases of tuberculosis were identified.

Source of infection. Family A and family C had been close friends for many years. It is postulated that Mrs A contracted the disease from Mrs C in 1982 and had remained symptom free until November or December 1984. She had not had a chest X-ray previously. During the period December 1984 to April 1985 Mrs A had a productive cough and had frequent close contact with cases 2, 3, 4, 5, 6 and 7. This might in part explain how case 4 developed the disease despite being under surveillance from 1982 until March 1984.

This outbreak, particularly case 7, also illustrates the need to contact-trace households which are not part of the extended family, where vulnerable contacts have been exposed to smear-positive cases.

HAEMOPHILIA, BLOOD TRANSFUSION AND THE AIDS VIRUS IN CHILDREN

In the United States, most children who are seropositive for HTLV-III, are thought to have acquired the virus by vertical transmission from their mothers during pregnancy or in the perinatal period.[1]

Transplacental transmission of the virus has been documented on at least 2 occasions[2, 3]. In both cases the children had been delivered by caesarian section and had had no postpartum contact with their mothers. Transplacental transmission of the virus has been shown to occur as early as the 20th week of gestation[4].

Perinatal infection of a child by the virus has also been reported[5]. The mother appears to have acquired HTLV-III from a postpartum blood transfusion and available data indicate that the virus was transmitted to the infant through breast milk.

A much smaller group of seropositive paediatric patients appears to have acquired the virus through infusion of blood or blood products, and of these, most are haemophiliacs. A recent report suggests that approximately 170/900 boys in the United Kingdom aged under 15 who have classical haemophilia are seropositive to HTLV-III[6]. Within this group the proportion of haemophiliacs from different parts of the UK who are seropositive varies, due in part to the source of factor VIII used in replacement therapy. The highest proportions are seen where factor VIII concentrate from several donors has been used - the lowest where only cryoprecipitate from single donors or concentrate made by the UK transfusion service had been given.

The proportion of haemophiliacs inadvertently exposed to HTLV-III who will later suffer symptoms of infection is unclear, but the present limited data suggest that it will be less than 20%[7]. Nevertheless, several syndromes other than AIDS may follow HTLV-III infection. Some are acute, occur shortly after exposure, and include a glandular fever-like pattern of symptoms and an encephalitis. However, HTLV-III associated disease (AIDS - related complex, or ARC) occurs more frequently. ARC is a chronic condition, producing lymphadenopathy, weight loss, night sweats, and thrombocytopenia with lymphocyte abnormalities. Up to the (Australian) spring of 1985 no UK children with haemophilia were reported with AIDS, though a few had developed other diseases which, based on adult experience suggest that some will eventually develop opportunistic infections.

The major risk associated with HTLV-III infected children, apart from AIDS or ARC, is that of transmission of the virus to contacts. Current evidence suggests that the risks of casual transmission of HTLV-III by young children to playmates or siblings are negligible. To the end of 1985 there was no clear evidence that any documented case of HTLV-III infection had been acquired in such a way, either in the UK or the U.S.A. Similarly, several studies on families with HTLV-III seropositive members had all failed to show virus transmission between members unequivocally arising outside the context of sexual or perinatal transmission[1, 8].

It appears that the only precaution necessary for normal domestic and social contacts of infected children is to maintain adequate standards of personal hygiene. On the available evidence, isolation or exclusion from school of seropositive children is unwarranted.

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AN OUTBREAK OF FOOD-BORNE STREPTOCOCCAL INFECTION IN ALBERTA, CANADA.

(Based on CDS 1986 86/05 5-7)

During a 3 day period in late July 1985 physicians in Goodfare, Alberta, Canada reported an usually high incidence of sore throat and fever among patients who had recently attended a community barbeque. The local health authority conducted an investigation to determine whether consumption of any of the foods served at the barbeque was responsible for the outbreak.

One hundred and one of the approximately 200 guests at the barbeque were interviewed. Of these, 47 (46.5%) reported having had a sore throat after the barbeque. The incidence of various other symptoms experienced is summarised in table 1.

Table 1

Frequency distribution of symptoms reported by 47 persons who had a sore throat.

SYMPTOMS	NO. (%) OF CASES WITH SYMPTOMS
Sore Throat	47 (100)
Fever	25 (53)
Diarrhoea	16 (34)
Rash	1 (2)
Nausea	17 (36)
Vomiting	6 (12)

Streptococci were isolated from 11 of the 47 persons with a sore throat. The other 36 reported symptoms of illness which were characteristic of streptococcal throat infection. Of the 11 positive throat swabs, 4 were from persons involved in the preparation of food for the barbeque.

Laboratory cultures of foods served at the barbeque were negative for streptococci. However, an analysis of the frequency of illness versus specific foods eaten implicated the potato salad as a source of infection. The significant difference between the numbers of persons who ate the potato salad and became ill (64%), and the number who did not eat potato salad and became ill (16%) supports this theory. (See Table 2)

Table 2

Food-specific attack rate

	No. Who Ate Specified Food			No. Who Did Not Eat Specified Food			Difference in Percent
Food Item	Ill	Not Ill	% Ill	Ill	Not Ill	% Ill	
Ham Steak	38	30	55.88	9	24	27.27	28.61
Beans	36	26	58.06	11	28	28.20	29.86
Macaroni Salad	22	24	47.82	25	30	45.45	2.37
Well Water	19	19	50.00	28	35	44.44	5.56
Potato Salad	41	23	64.06	6	31	16.21	47.85
Coleslaw	23	16	58.97	24	38	38.70	20.27
Buns	33	24	57.89	14	30	31.81	26.08

The means whereby the potato salad became contaminated with streptococci is unknown. An infected person, possibly one of the food handlers, may have inoculated the food by a cough or sneeze during preparation, storage or serving of the food. Another possibility is that the potato salad may have been contaminated by an infected guest at the serving table. The table was not adequately protected against airborne contamination and the potato salad (and some other foods) was not refrigerated after preparation. These conditions would allow rapid growth of streptococci.

CDI EDITORIAL COMMENT

Food borne illnesses are much more common than is realised in the general community, and the need for proper food handling and storage practices should be emphasised. Most illnesses attributable to contaminated foods present as gastro-intestinal disturbances. The present report of an outbreak of streptococcal pharyngitis is unusual.

Although the precise source of the outbreak is unclear, the potato salad was implicated. The high incidence of symptoms among guests (47 of 101 persons interviewed) suggests that its contamination occured during preparation.

RECOMMENDED INFECTION - CONTROL PRACTICES FOR DENTISTRY
(Based on MMWR Vol. 35/No 5/18 April 1986)

Dental personnel may be exposed to a wide variety of microorganisms in the blood and saliva of patients they treat in the dental surgery. These include Mycobacterium tuberculosis, hepatitis B virus, staphylococci, streptococci, cytomegalovirus, herpes simplex virus types I and II, human T-lymphotropic virus type III(HTLV-III), and a number of viruses that infect the upper respiratory tract. Infections may be transmitted in dental practice by blood or saliva through direct contact, droplets, or aerosols. Although not documented, indirect contact transmission of infection by contaminated instruments is possible. Patients and dental health-care workers (DHCWs) have the potential to transmit infections to each other(1).

A common set of infection-control strategies should be effective for preventing hepatitis B, acquired immunodeficiency syndrome, and other infectious diseases caused by bloodborne viruses(2,3,4). The ability of hepatitis B virus to survive in the environment (5) and the high titres of virus in blood make this virus a good model for infection-control practices to prevent transmission of a large number of other infectious agents by blood or saliva(5,6). Because all infected patients cannot be identified by history, physical examination, or readily available laboratory tests, the following recommendations should be used routinely in the care of all patients in dental practices(3).

MEDICAL HISTORY

Always obtain a thorough medical history which includes specific questions about medications, current and recurrent illnesses, hepatitis, unintentional weight loss, lymphadenopathy, oral soft tissue lesions, or other infections. Medical consultation may be indicated when a history of active infection or systemic disease is elicited.

USE OF PROTECTIVE ATTIRE AND BARRIER TECHNIQUES

1. For protection of personnel and patients, gloves must always be worn when touching blood, saliva, or mucous membranes (7,8,9,10). Gloves must be worn by DHCWs when touching blood-soiled items, body fluids, or secretions, as well as surfaces contaminated with them. Gloves must be worn when examining all oral lesions. All work must be completed on one patient, where possible, and the hands must be washed and regloved before performing procedures on another patient. Repeated use of a single pair of gloves is not recommended, since such use is likely to produce defects in the glove material, which will diminish its value as an effective barrier.

2. Surgical masks and protective eyewear or chin-length plastic face shields must be worn when splashing or spattering of blood or other body fluids is likely, as is common in dentistry (11,12).

3. Reusable or disposable gowns, laboratory coats, or uniforms must be worn when clothing is likely to be soiled with blood or other body fluids. If reusable gowns are worn, they may be washed, using a normal laundry cycle. Gowns should be changed at least daily or when visibly soiled with blood(13).

4. Impervious-backed paper, aluminium foil, or clear plastic wrap may be used to cover surfaces (e.g. light handles or x-ray unit heads) that may be contaminated by blood or saliva and that are difficult or impossible to dissinfect. The coverings should be removed (while DHCWs are gloved), discarded, and then replaced (after ungloving) with clean material between patients.

5. All procedures and manipulations of potentially infective materials should be performed carefully to minimise the formation of droplets, spatters, and aerosols, where possible. Use of rubber dams, where appropriate, high-speed evacuation, and proper patient positioning should facilitate this process.

HANDWASHING AND CARE OF HANDS

Hands must always be washed between patient treatment contacts (following removal of gloves), after touching inanimate objects likely to be contaminated by blood or saliva from other patients, and before leaving the operating room. The rationale for handwashing after gloves have been worn is that gloves become perforated, knowingly or unknowingly, during use and allow bacteria to enter beneath the glove material and multiply rapidly. For many routine dental procedures, such as examinations and nonsurgical techniques, handwashing with plain soap appears to be adequate, since soap and water will remove transient microorganisms acquired directly from patient contact [13]. For surgical procedures, an antimicrobial surgical handscrub should be used[14]. Extraordinary care must be used to avoid hand injuries during procedures. However, when gloves are torn, cut, or punctured, they must be removed immediately, hands thoroughly washed, and regloving accomplished before completion of the dental procedure. DHSWs who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling dental patient-care equipment until the condition resolves[15].

USE AND CARE OF SHARP INSTRUMENTS AND NEEDLES

1. Sharp items (needles, scalpel blades, and other sharp instruments) should be considered as potentially infective and must be handled with extraordinary care to prevent unintentional injuries.

2. Disposable syringes and needles, scalpel blades, and other sharp items must be placed into puncture-resistant containers located as close as practical to the area in which they were used. To prevent needlestick injuries, disposable needles should not be recapped; purposely bent or broken; removed from disposable syringes; or otherwise manipulated by hand after use.

3. Recapping of a needle increases the risk of unintentional needlestick injury. There is no evidence to suggest that reusable aspirating-type syringes used in dentistry should be handled differently from other syringes. Needles of these devices should not be recapped, bent, or broken before disposal.

4. Because certain dental procedures on an individual patient may require multiple injections of anesthetic or other medications from a single syringe, it would be more prudent to place the unsheathed needle into a "sterile field" between injections rather than to recap the needle between injections. A new (sterile) syringe and a fresh solution should be used for each patient.

INDICATIONS FOR HIGH LEVEL DISINFECTION OR STERILISATION OF INSTRUMENTS

Surgical and other instruments that normally penetrate soft tissue and/or bone (e.g. forceps, scalpels, bone chissels, scalers, and surgical burs) should be sterilised after each use. Instruments that are not intended to penetrate oral soft tissues or bone (e.g. amalgam condensers, plastic instruments, and burs) but that may come into contact with oral tissues should also be sterilised after each use, if possible; however, if sterilisation is not feasible, the latter instruments should receive high-level disinfection(3, 13, 16).

METHODS FOR HIGH-LEVEL DISINFECTION OR STERILISATION

Before high-level disinfection or sterilisation, instruments should be cleared to remove debris. Cleaning may be accomplished by a thorough scrubbing with soap and water or a detergent, or by using a mechanical device (e.g. an ultrasonic cleaner). Persons involved in cleaning and decontaminating instruments should wear heavy-duty rubber gloves to prevent hand injuries. Metal and heat-stable dental instruments should be routinely sterilised between use by steam under pressure (autoclaving), dry heat, or chemical vapor. The adequacy of sterilisation cycles should be verified by the periodic use of spore-testing devices (e.g. weekly for most dental practices) (13). Heat-and steam-sensitive chemical indicators may be used on the outside of each pack to assure it has been exposed to a sterilising cycle. Heat-sensitive instuments may require up to 10 hours' exposure in a liquid chemical agent registered by the US Environmental Protection Agency (EPA) as a disinfectant/sterilant; this should be followed by rinsing with sterile water. High-level disinfection may be accomplished by immersion in either boiling water for at least 10 minutes or an EPA-registered disinfectant/sterilant chemical for the exposure time recommended by the chemical's manufacturer.

DECONTAMINATION OF ENVIRONMENTAL SURFACES

At the completion of work activities, countertops and surfaces that may become contaminated with blood or saliva should be wiped with absorbent toweling to remove extraneous organic material, then disinfected with a suitable chemical germicide. A solution of sodium hypochlorite (household bleach) prepared fresh daily is an inexpensive and very effective germicide. Concentrations ranging from 5,000 ppm (a 1:10 dilution of household bleach) to 500 ppm (a 1:100 dilution) sodium hypochlorite are effective, depending on the amount of organic material (e.g. blood, mucous, etc) present on the surface to be cleaned and disinfected. Caution should be exercised, since sodium hypochlorite is corrosive to metals, especially aluminum.

DECONTAMINATION OF LABORATORY SUPPLIES AND MATERIALS

Blood and saliva should be thoroughly and carefully cleaned from laboratory supplies and materials that have been used in the mouth (e.g. impression materials, bite registration), especially before polishing and grinding intra-oral devices. Materials, impressions, and intra-oral appliances should be cleaned and disinfected before being handled, adjusted, or sent to a dental laboratory (17). These items should also be cleaned and disinfected when returned from the dental laboratory and before placement in the patient's mouth.

Because of the ever increasing variety of dental materials used intra-orally, DHCWs are advised to consult with manufacturers as to the stability of specific materials relative to disinfection procedures. A chemical germicide that is registered with the EPA as a "hospital disinfectant" and that has a label claim for mycobactericidal (e.g. tuberculocidal) activity is preferred, because mycobacteria represent one of the most resistant groups of microorganisms; therefore, germicides that are effective against mycobacteria are also effective against other bacterial and viral pathogens (15). Communication between a dental office and a dental laboratory with regard to handling and decontamination of supplies and materials is of the utmost importance.

USE AND CARE OF ULTRASONIC SCALERS, HANDPIECES, AND DENTAL UNITS

1. Routine sterilisation of handpieces between patients is desirable; however, not all handpieces can be sterilised. The present physical configuration of most handpieces do now readily lend them to high-level disinfection of both external and internal surfaces (see 2 below); therefore, when using handpieces that cannot be sterilised, the following cleaning and disinfection procedures should be completed between each patient. After use, the handpiece should be flushed (see 2 below), then thoroughly scrubbed with a detergent and water to remove adherent material. It should then be thoroughly wiped with absorbent material saturated with a chemical germicide that is registered with the EPA as a "hospital disinfectant" and is mycobactericidal at use-dilution(15). The disinfecting solution should remain in contact with the handpieces for a time specified by the disinfectant's manufacturer. Ultrasonic scalers and air/water syringes should be treated in a similar manner between patients. Following disinfection, any chemical residue should be removed by rinsing with sterile water.

2. Because water retraction valves within the dental units may aspirate infective materials back into the handpiece and water line, check valves should be installed to reduce the risk of transfer of infective material(18). While the magnitude of this risk is not known, it is prudent for water-cooled handpieces to be run and to discharge water into a sink or container for 20-30 seconds after completing care on each patient. This is intended to physically flush out patient material that may have been aspirated into the handpiece or water line. Additionally, there is some evidence that overnight bacterial accumulation can be signficantly reduced by allowing water-cooled handpieces to run and to discharge water into a sink or container for several minutes at the beginning of the clinic day(19). Sterile saline or sterile water should be used as a coolant/irrigator when performing surgical procedures involving the cutting of soft tissue or bone.

HANDLING OF BIOPSY SPECIMENS

In general, each specimen should be put in a sturdy container with a secure lid to prevent leaking during transport. Care should be taken when collecting specimens to avoid contamination of the outside of the container. If the outside of the container is visibly contaminated, it should be cleaned and disinfected or placed in an impervious bag(2).

DISPOSAL OF WASTE MATERIALS

All sharp items (especially needles), tissues, or blood should be considered potentially infective and should be handled and disposed of with special precautions. Disposable needles, scalpels, or other sharp items should be placed intact into puncture-resistant containers before disposal. Blood, suctioned fluids, or other liquid waste may be carefully poured into a drain connected to a sanitary sewer system. Other solid waste contaminated with blood or other body fluids should be placed in sealed, sturdy impervious bags to prevent leakage of the contained items. Such contained solid wastes can then be disposed of according to requirements established by local or state environmental regulatory agencies and published recommendations[13, 20].

MMWR EDITORIAL NOTE

All DHCWs must be made aware of sources and methods of transmission of infectious diseases. The above recommendations for infection control in dental practices incorporate procedures that should be effective in preventing the transmission of infectious agents from dental patients to DHCWs and vice versa. Assessment of quantifiable risks to dental personnel and patients for specific diseases requires further research. There is no current documentation of patient-to-patient blood - or saliva-borne disease transmission from procedures performed in dental practice. While few in number, reported outbreaks of dentist-to-patient transmission of hepatitis B have resulted in serious and even fatal consequences[9]. Herpes simplex virus has been transmitted to over 20 patients from the fingers of a DHCW[10]. Serologic markers for hepatitis B in dentists have increased dramatically in the United States over the past several years, which suggests current infection-control practices have been insufficient to prevent the transmission of this infectious agent in the dental surgery. While vaccination for hepatitis B is strongly recommended for dental personnel[21], vaccination alone is not cause for relaxation of strict adherence to accepted methods of asepsis, disinfection, and sterilisation.

Various infection-control guidelines exist for hospitals and other clinical settings. Dental facilities located in hospitals and other institutional settings have generally utilised existing guidelines for institutional practice. These recommendations are offered as guidance to DHCWs in noninstitutional settings for enhancing infection-control practices in dentistry; they may be useful in institutional settings also.

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CIGUATERA FISH POISONING - VERMONT
(Based on MMWR Vol. 35/No. 16, 25 April 1986)

On October 29, 1985, the Epidemiology Division, Vermont Department of Health, learned of two persons with symptoms consistent with ciguatera fish poisoning. Both had eaten barracuda at a local restaurant on October 19. One ill person, a 48 year old woman, had vomiting, diarrhoea, myalgia, and chills 4 hours after the meal, followed the next morning by pruritus, flushing, burning of the tongue and reversal of hot and cold temperature sensation of objects held in her hands. The second ill person, a 30 year old male bartender at the restaurant, sought medical attention for severe myalgia and gingival and dental dysesthesia several hours after eating barracuda. In both patients, most symptoms subsided; however, some pruritus and temperature reversal persisted 6 weeks later. A third patron reported pruritus to the restaurant after the meal but was lost to follow-up. No additional cases were identified by contacting the two local emergency rooms and requesting case reports in the Vermont Disease Control Bulletin.

The restaurant had served 24 portions of barracuda received fresh by air from a fish distributor in Florida. Two other restaurants in Burlington had received barracuda from the same shipment. One served 44 portions, and the second froze all portions received. The fish distributor reported that the fish was purchased from boats fishing in Florida's coastal waters but could not identify the exact location. The distributor ships to locations throughout the contiguous United States. No information was available about the distribution of other fish from the same catch.

All portions of a single barracuda frozen by one restaurant and tested for ciguatoxin by enzyme immunoassay at the Department of Pathology, University of Hawaii, were positive for ciguatoxin.

MMWR EDITORIAL NOTE

Human ciguatera poisoning can occur after consumption of a wide variety of coral reef fish, such as barracuda, grouper, red snapper, amberjack, surgeonfish, and sea bass[1,2]. Ciguatoxin and related toxins are derived from dinoflagellates, which herbivorous fish consume while foraging through the macro-algae[3]. Humans ingest the toxin by consuming either herbivorous fish or carnivorous fish that have eaten the contaminated herbivores. Larger, more predacious reef fish are generally more likely to be toxic[4,5].

Since the toxin is heat-stable, cooking does not make the fish safe to eat. As the domestic and imported fish industry expands its market, the diagnosis of this "tropical" disease must be considered even in areas to which coral-reef fish are not native. Ciguatera fish poisoning can be diagnosed by the characteristic combination of gastrointestinal and neurologic symptoms in a person who ate a suspect fish[6]. The diagnosis can be supported by detection of ciguatoxin in the implicated fish. Hawaii now uses a "stick test" immunoassay to detect ciguatoxin in fish[7]. The test is sensitive, specific, inexpensive, and easy to use in the field. In Hawaii, if an outbreak-related fish tests positive for ciguatoxin, the reef area of catch is posted to discourage further fishing in that area. In Miami, Florida, because barracuda have been frequently associated with ciguatera poisoning, a city ordinance bans the sale of barracuda.

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AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 28/4/86 - 11/5/86 BULLETIN NUMBER 86/10
VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED	1	1			4		16		22
0101 ADENOVIRUS TYPE 1				2					2
0102 ADENOVIRUS TYPE 2	5			1	1	1			8
0103 ADENOVIRUS TYPE 3	3					2		1	6
0105 ADENOVIRUS TYPE 5						1		1	2
0106 ADENOVIRUS TYPE 6						1			1
0107 ADENOVIRUS TYPE 7								1	1
0108 ADENOVIRUS TYPE 8	1		1	1					3
0119 ADENOVIRUS TYPE 19								1	1
0199 ADENOVIRUS TYPING PENDING	1	1	2		9				13
0203 INFLUENZA B VIRUS				1			1		2
0301 PARAINFLUENZA VIRUS TYPE 1					6		1		7
0302 PARAINFLUENZA VIRUS TYPE 2					8	3			11
0303 PARAINFLUENZA VIRUS TYPE 3				1	1		1		3
0399 PARAINFLUENZA VIRUS TYPING PENDING		1		1	1	1			4
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	1	2			1	1	3	3	11
0500 RHINOVIRUS (ALL TYPES)	1			5	11	3			20
0600 MYCOPLASMA PNEUMONIAE	6			4			3	4	17
0700 ORNITHOSIS-PSITTACOSIS	3			3					6
0902 COXSACKIEVIRUS B2				1					1
0904 COXSACKIEVIRUS B4							1		1
0905 COXSACKIEVIRUS B5							1		1
1001 ECHOVIRUS TYPE 1				1					1
1004 ECHOVIRUS TYPE 4				1					1
1005 ECHOVIRUS TYPE 5	1								1
1007 ECHOVIRUS TYPE 7							1		1
1011 ECHOVIRUS TYPE 11	1						1	1	3
1020 ECHOVIRUS TYPE 20								2	2
1022 ECHOVIRUS TYPE 22		1				2			3
1026 ECHOVIRUS TYPE 26						1			1
1100 POLIOVIRUS NOT TYPED			4						4
1101 POLIOVIRUS TYPE 1						1			1
1104 POLIOVIRUS-VACCINAL STRAIN							2		2
1200 MUMPS VIRUS								1	1
1300 HERPES VIRUS GROUP-NOT TYPED	15							1	16
1301 HERPES SIMPLEX VIRUS NOT-TYPED		1		3					4
1302 EPSTEIN-BARR VIRUS (EB VIRUS)		3	1	11		1		6	22
1303 VARICELLA-ZOSTER VIRUS	2	1		1		2	3		9
1306 HERPES SIMPLEX TYPE 1	20		10	29		30	43	18	150
1307 HERPES SIMPLEX TYPE 2	100		37	55		31	94	72	389
1399 HERPES VIRUS TYPING PENDING					6				6
1401 COXIELLA BURNETI	1			2		2	7	1	13
1502 PICORNA VIRUS-NOT TYPED	7		5				10	1	23
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)	1								1
1521 MEASLES VIRUS	1		3						4
1522 RUBELLA VIRUS	1	2					10	2	15
1532 HEPATITIS B ANTIGEN	11	2	11	24		24	31	16	119
1535 HEPATITIS A ANTIBODY	1	1	1	4		12	2	16	37
1541 CHLAMYDIA A - C TRACHOMATIS	24		5			43	18	48	138
1556 CMV - CYTOMEGALOVIRUS		1	1	1	3	7	10	2	25
1562 REOVIRUS (ALL TYPES)				1					1
1564 ROTAVIRUS	7	1	3		6	16		7	40
1570 ENTEROVIRUS TYPE 70			1						1
1571 ENTEROVIRUS TYPE 71 (BRCR)				3					3
1599 ENTEROVIRUS TYPING PENDING			12		11				23
9992 ROSS RIVER VIRUS			7	46			240	9	302
9994 SMALL VIRUS (LIKE) PARTICLE	1								1
9998 ARBO. GROUP B.							4		4
Total	216	18	104	202	68	185	503	214	1,510

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 28/4/86 - 11/5/86

Viral Identifications by Clinical Information Table 1.
Code 00,99 -No ill or data; 01,02,11,12 -Respiratory; E3 -Encephalitis; M3 -Meningitis; 04 -Paralysis; 05,13 -CNS other unspec.; 07,49 -GI; 17,47 -Hepatic; 19 -CVS; 89 -Urinary; 06 -Skin/mucous.

VIRUS OR VIRAL ANTIGEN	No-ill or data	Respir-atory	Enceph-alitis	Mening-itis	Para-lysis	CNS other unspec	GI	Hepa-tic	CVS	Urin-ary	Skin/ mucs memb
0101 ADENOVIRUS TYPE 1.....							1				
0102 ADENOVIRUS TYPE 2.....	1	3					2				
0103 ADENOVIRUS TYPE 3.....		3					1				
0105 ADENOVIRUS TYPE 5.....		1									
0106 ADENOVIRUS TYPE 6.....		1									
0107 ADENOVIRUS TYPE 7.....							1				
0203 INFLUENZA B VIRUS.....	1								1		
0301 PARAINFLUENZA VIRUS TYPE 1....		7									
0302 PARAINFLUENZA VIRUS TYPE 2....		11		1							
0303 PARAINFLUENZA VIRUS TYPE 3....		3									
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....		11									
0500 RHINOVIRUS (ALL TYPES).....	1	7									
0600 MYCOPLASMA PNEUMONIAE.....		15							1		
0700 ORNITHOSIS-PSITTACOSIS.....		3									1
0902 COXSACKIEVIRUS B2.....				1							
0904 COXSACKIEVIRUS B4.....		1									
0905 COXSACKIEVIRUS B5.....		1									
1001 ECHOVIRUS TYPE 1.....				1							
1007 ECHOVIRUS TYPE 7.....				1							
1011 ECHOVIRUS TYPE 11.....	1			2							
1020 ECHOVIRUS TYPE 20.....		1									
1022 ECHOVIRUS TYPE 22.....		1					1				
1026 ECHOVIRUS TYPE 26.....							1				
1101 POLIOVIRUS TYPE 1.....							1				
1104 POLIOVIRUS-VACCINAL STRAIN....		1					1				
1300 HERPES VIRUS GROUP-NOT TYPED..											1
1301 HERPES SIMPLEX VIRUS NOT-TYPED			1								
1302 EPSTEIN-BARR VIRUS (EB VIRUS).	4	1									1
1303 VARICELLA-ZOSTER VIRUS.....				1							8
1306 HERPES SIMPLEX TYPE 1.....	3	5									68
1307 HERPES SIMPLEX TYPE 2.....	12										83
1401 COXIELLA BURNETI.....								3	1		
1502 PICORNA VIRUS-NOT TYPED.....	1	3		3		6	5				2
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS).....											1
1521 MEASLES VIRUS.....		1									2
1522 RUBELLA VIRUS.....	1	1	1								12
1532 HEPATITIS B ANTIGEN.....	38	1						68			
1535 HEPATITIS A ANTIBODY.....	9							28			
1556 CMV - CYTOMEGALOVIRUS.....	1	5	1		1	1		1		4	
1562 REOVIRUS (ALL TYPES).....			1								
1564 ROTAVIRUS.....		1					39				
1570 ENTEROVIRUS TYPE 70.....				1							
1571 ENTEROVIRUS TYPE 71 (BRCR)....		1									2
9992 ROSS RIVER VIRUS.....	57	7									69
9994 SMALL VIRUS (LIKE) PARTICLE...							1				
9998 ARBO. GROUP B.		1	1		1						
Total.....	130	97	5	11	2	7	54	100	3	4	250

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 28/4/86 - 11/5/86
Viral Identifications by Clinical Information Table 2.
Code 10 -Eye; 59 -Genital; 39 -Endo/sal gland;
38 -RES; 29 -Muscle/joint; 69 -Congenital; P8 -PUO;
G8 -Fever/malaise; 09 -Other; A1 -SIDS ...

VIRUS OR VIRAL ANTIGEN	Eye	Genital	Endo/sal gland	RES	Muscle/joint	Congenital	PUO	Fever/malaise	Other	SIDS
0101 ADENOVIRUS TYPE 1.....								1		
0102 ADENOVIRUS TYPE 2.....									2	
0103 ADENOVIRUS TYPE 3.....	1								1	
0105 ADENOVIRUS TYPE 5.....							1			
0108 ADENOVIRUS TYPE 8.....	3									
0119 ADENOVIRUS TYPE 19.....	1									
0500 RHINOVIRUS (ALL TYPES).....	1									
0600 MYCOPLASMA PNEUMONIAE.....							1	2	1	
0700 ORNITHOSIS-PSITTACOSIS.....								1	1	
1004 ECHOVIRUS TYPE 4.....								1		
1005 ECHOVIRUS TYPE 5.....								1	1	
1020 ECHOVIRUS TYPE 20.....	1						1			
1022 ECHOVIRUS TYPE 22.....								1		
1200 MUMPS VIRUS.....				1						
1301 HERPES SIMPLEX VIRUS NOT-TYPED					1			1	1	
1302 EPSTEIN-BARR VIRUS (EB VIRUS).			9	4				3		
1303 VARICELLA-ZOSTER VIRUS.....								1		
1306 HERPES SIMPLEX TYPE 1.....	6	66					2	1	1	
1307 HERPES SIMPLEX TYPE 2.....	1	296								
1401 COXIELLA BURNETI.....								11	1	
1502 PICORNA VIRUS-NOT TYPED.....			1		1			3		1
1521 MEASLES VIRUS.....				1				1		
1522 RUBELLA VIRUS.....					6					
1532 HEPATITIS B ANTIGEN.....		1				1			11	
1541 CHLAMYDIA A - C.TRACHOMATIS...	1	132							5	
1556 CMV - CYTOMEGALOVIRUS.....		4				6	1			
9992 ROSS RIVER VIRUS.....					217		3	42	2	
9998 ARBO. GROUP B.					2			1		
Total.....	15	499	10	6	227	7	9	71	27	

IMPORTANT NOTICE Our ref 86/4465

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