Operation Safe Haven: an evaluation of health surveillance and monitoring in an acute setting

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Abstract

From May to June 1999, 3,920 ethnic Albanians from Kosovo arrived in Australia as part of *Operation Safe Haven*. These people were evacuated from refugee camps in the former Yugoslav Republic of Macedonia. Initial processing in Australia occurred at East Hills Reception Centre, and accommodation for the duration of stay was provided in eight Haven Centres in five States. The arrival of a large number of refugees in a short time frame is unprecedented in Australia. A health surveillance system was developed and critical health data were collected to assess health status and needs, plan care, monitor for potential outbreaks of communicable diseases, track service use, to meet international reporting requirements and document our response to this crisis.

In this article the health surveillance system is evaluated and suggestions are offered for the formulation of specific guidelines necessary for health surveillance in acute settings. *Commun Dis Intell* 2000;24:21-26.

Introduction

As the conflict in Kosovo escalated in early 1999, hundreds of thousands of ethnic Albanians were driven from their homes into neighbouring countries. In response to a request from the United Nations High Commissioner for Refugees, Australia agreed to provide temporary safe haven for 4,000 refugees at short notice. This was the beginning of *Operation Safe Haven*, the largest single humanitarian evacuation that Australia has ever undertaken.

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Evacuation to Australia was voluntary. Over a 6 week period from 7 May 1999, a total of 3,920 refugees were flown to Australia in 11 groups, ranging in size from 50 to 450 people, arriving at 2-7 day intervals. Each group of evacuees was received at East Hills Reception Centre in Sydney before transfer to Haven Centres for the duration of their stay. The Centres were at Army bases in five Australian States and included East Hills once its role as a Reception Centre had been completed.

Advance planning for health services was based on available information on refugee health status in Kosovo and in the Macedonian camps.[1, 2, 3] This indicated that the main health issues would be tuberculosis, chronic conditions where management had deteriorated or lapsed over recent times, and pregnancies with little or no ante-natal care.

Although international standards were available,[4, 5, 6] there were no pre-existing Australian guidelines for the establishment of health surveillance in a rapid response setting. Screening for immediate communicable disease concerns was established early. As the need for more formalised reporting systems and comprehensive monitoring of evacuee health data became apparent, we were invited to establish a health surveillance and monitoring system to meet this need. This article describes the health aspects of *Operation Safe Haven*, documents the initial development of the system and the difficulties encountered, and makes recommendations for improving our response to future crises of this kind.

Health aspects of *Operation Safe Haven*

Prior to departure from the Macedonian camps, refugees were assessed for fitness to travel by Australian doctors temporarily based in Skopje. Health checks and immigration formalities were undertaken at the Reception Centre before transfer to Haven Centres.

Shortly after arrival at the Reception Centre, all evacuees completed a triage questionnaire devised by the South Western Sydney Area Health Service *Operation Safe Haven* Working Group. Evacuees were asked to indicate if they had specific symptoms (cough, sputum, blood in the sputum, fever, night sweats, diarrhoea, rash), needed to see a doctor, or were in need of urgent dental treatment. Triage nurses reviewed responses to identify those with urgent health problems, or possible communicable diseases, and to prioritise those in need of tuberculosis screening.

Immigration health screening of the evacuees was undertaken by Health Services Australia (HSA), the national organisation contracted by the Department of Immigration and Multicultural Affairs (DIMA) to undertake immigration health screening for onshore applicants. Screening was in accordance with a protocol specifically developed for the Kosovar evacuees by the National Centre for Disease Control in consultation with DIMA, HSA and the Communicable Diseases Network Australia New Zealand (CDNANZ).

All evacuees had a physical examination and urinalysis. Those identified as having health problems in need of immediate care were referred to the on-site primary health care clinic. Evacuees aged 16 years or older, except for pregnant women, had a chest X-ray to screen for tuberculosis. Children less than 16 years of age with a cough or other symptom consistent with tuberculosis also had a chest X-ray. No other routine screening tests were undertaken but primary care medical practitioners were encouraged to have a low threshold of suspicion for testing for possible communicable diseases.* Laboratory confirmed notifiable conditions were reported in the usual way to the New South Wales Notifiable Diseases Database.

Evacuees with possible tuberculosis were further investigated and managed under the clinical supervision of the local specialised tuberculosis clinic. A range of other medical, dental, public health, mental health and counselling services were provided through the South Western Sydney Area Health Service and the New South Wales Service for the Treatment and Rehabilitation of Torture and Trauma Survivors (STARTTS). Services were either on-site or at a nearby public hospital (Liverpool Hospital).

Interpreter services were provided on-site and were critical to all aspects of health screening and service provision. Written information and questionnaires were translated into Kosovar Albanian and interpreters assisted those with language or literacy difficulties.

A medical record, containing hard copies of all health documentation, was created for each evacuee at the Reception Centre and forwarded to the relevant Haven Centre medical service when the evacuee was transferred.

Immunisation was undertaken at the Haven Centres, where follow-up and continuing health care, including torture and trauma counselling and maternal and child health services, were also provided. Those with active tuberculosis were only transferred once they were stabilised on treatment and considered to be non-infectious.

Aims of the Surveillance System

The aims of the surveillance system were established following consultation with the Commonwealth Department of Health and Aged Care, relevant State health authorities, and medical service providers at the Reception and Haven Centres, and reflected the identified health data needs for the agencies involved in providing health care.

Primary aims were to:

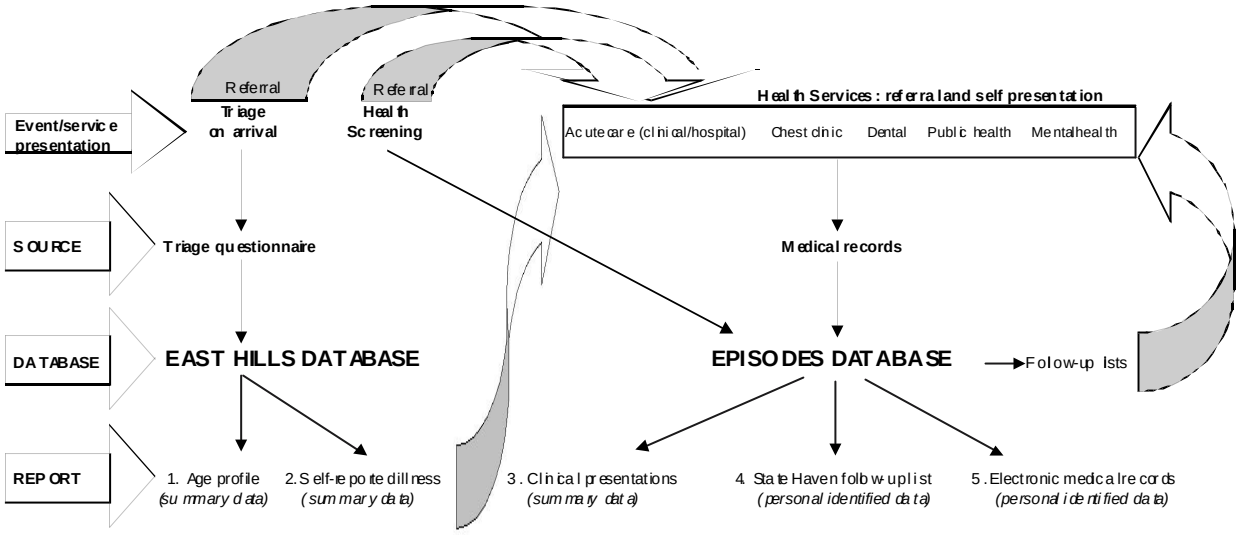
- determine the health status of incoming evacuees to plan for appropriate care;
- ensure timely ascertainment of active cases of tuberculosis; and
- monitor for potential outbreaks of communicable diseases.

Secondary aims were to:

- document health status over the duration of stay, including communicable disease incidence, prevalence of chronic disease, mortality and births;

* Pregnant women were offered routine ante-natal screening for hepatitis B (HBsAg), rubella immunity, syphilis (VDRL/TPHA), and (where indicated) HIV as well as a full blood count, blood group and midstream urine examination. Pregnant women did not have a chest X-ray, but were examined by a chest physician. In the absence of clinical evidence of tuberculosis, pregnant women were allowed to travel on to their Haven Centre, but were required to sign an undertaking to have a chest X-ray following the birth of the baby.

Figure 1. Health surveillance data sources and reports generated



- record preventive health care activities, such as immunisation;
- collate health status data for repatriation; and
- provide data to assist in monitoring costs of health services for the evacuees.

The secondary aims assumed that data collected and collated at the Reception Centre would form a core data set that would be transferred to, and maintained at, the Haven Centres.

Methods

The Kosovar Refugee Medical Surveillance Group, comprising representatives of the Commonwealth Department of Health and Aged Care and DIMA, State health authorities and health service providers at the Reception and Haven Centres, was established as a communication forum for surveillance and other health issues. Following a rapid assessment of data needs and the quality of available health service information, a surveillance system was developed with mechanisms to link data from a number of sources (Figure 1).

The DIMA database linked personal information (name, date of birth and sex) with the 'CampID' number. This was a unique identifier given to each evacuee on arrival at the Reception Centre. It comprised the flight number (1 to 11) combined with a number allocated sequentially from 1 (for example, 5/012 was the 12th person from Flight 5). These data were downloaded from the DIMA database into Excel 97 for incorporation in the 'East Hills' database.

Responses from the triage questionnaires were entered into the 'East Hills' database, which was originally created in Access 97 and subsequently converted to Excel 97 to facilitate the incorporation of DIMA data. Age and self-reported illness profiles were generated from this database.

A second database ('Episodes') was created in Access 97 to record information from the primary health care clinic records and immigration health screening summaries. For confidentiality, individuals were identified in this database by CampID number and, for those who had attended the primary health care clinic, their Medical Record Number (MRN). For clinic presentations, presenting symptoms, diagnoses, investigations and hospitalisation details were entered as free text. Diagnoses and investigations were also entered as predetermined categories. All records indicated whether follow-up was required at either the Reception Centre clinic or at the Haven Centre.

As well as creating an electronic medical record for each person, the database was used to generate lists of those needing follow-up and summary reports on clinical presentations. As neither of the identifiers used in this database was subsequently used in the Haven Centres, the preparation of follow-up lists required linkage of this database with the personal identifying information in the 'East Hills' database. The two databases were also compared to ensure individuals were followed up for assessment and/or treatment and to evaluate the usefulness of the self-reported triage information.

The data entered into the surveillance system for each flight varied in completeness and only the summary data for selected flights can be provided. The tuberculosis data were entered in a separate database managed directly by the South Western Sydney Public Health Unit and will be described elsewhere.

The surveillance system was evaluated,[7] both for demonstrable effectiveness achieved in the current setting, and the system potential.

Results

Practicality and usefulness

The system was designed to operate with minimal resources: one person with data entry assistance, one computer, printer, phone, fax and e-mail access. The health services were operating at maximum capacity and the methods of operation and the networking among agencies continued to evolve with each incoming flight. It was important in this setting to identify direct practical benefits of the system to build acceptance and ensure that the appropriate data were fed into the system.

Practical benefits of the surveillance system included assisting in tracking medical records, clarifying record number duplications, linking immigration screening follow-up recommendations to clinic attendance records, and supporting self-reported symptoms data by monitoring medical records for symptoms of possible public health significance. These benefits resulted from having the ability to link data, and the system having the only on-site computerised health databases permitting timely searching, sorting and collating of data.

Table 1. Age profile for Flights 1 to 9 (N=3,397)

Age (years)	<1	1 - 5	6-15	16-64	65+
Number	62	489	863	1,997	45
%	1.8	14.4	25.4	58.8	13.0

Note: Date of birth information was not available for all persons

Resources

Despite fulfilling critical information needs, resources were not committed to maintaining the health surveillance system for the entire period of evacuee intake. Similarly, health surveillance at the Haven Centres was not coordinated centrally to generate data that were compatible with data from the Reception Centre or across Havens. Consequently, the surveillance data presented are incomplete and confined to those collected and collated at the Reception Centre.

Reports generated

Lists of individuals requiring public health and clinical follow-up were created from the information in the triage questionnaires. Lists of those requiring further clinical follow-up at the Reception Centre or at the Haven Centres were also prepared. The following tables are examples of the collated data that were reported to the Reception and Haven Centres and State and national health agencies.

The first information summaries prepared after the arrival of each flight were age profiles. Age categories were chosen to identify relevant groups for health planning purposes, such as those with paediatric needs and those who had undergone chest X-ray (16 years and older). Collated data for the first 9 flights are shown in Table 1.

Summaries of self-reported illness from the triage questionnaires were the next reports created for each flight. The proportion of people reporting a need to see a medical practitioner differed between flights, ranging from 6% to 26%. Data from Flights 1 to 9 are collated in Table 2.

Linking the self-reported illness database with the medical records/immigration screening database did permit more systematic and complete public health surveillance. For example, some diarrhoeal illness was detected from medical records that had not been self-reported.

Table 2. Self-reported health information for Flights 1 to 9 (N=3,397)

	Cough >2 weeks	Cough with sputum	Sputum with blood	Fever	Night sweats	Diarrhoea	Rash <4 days	Need to see a doctor	Urgent dental treatment
%	2.9	2.0	0.3	0.8	2.4	0.8	0.9	16.0	8.8

Note: categories were not mutually exclusive, for example about half of those coughing up sputum also reported a cough of > 2 weeks duration.

Table 3. Clinic presentations by condition category for Flights 3 to 5 (N=350)

Condition	%	Condition	%	Condition	%
Upper respiratory infection	15	Minor injury/trauma	5	Eye	2
Gastrointestinal	13	Lower respiratory infection	5	Endocrine	2
Dental	12	Mental health	4	Motion sickness	2
Ear/Nose/Throat	11	Pregnancy	4	Central nervous system	1
Skin	9	Musculo-skeletal	3	Other	2
Genitourinary	6	Cardiovascular	3		

Table 4. Evacuees needing follow-up in Haven Centre (Flight 5, N=224[#])

	Ante-natal	Dental	Mental health	Ophthalmic	General medical	Public health	Specialist
%	2.7	14.3	1.3	3.1	22.7	7.6	15.2

#	Total people seen in clinics and/or who had HSA referrals to East Hills or Haven Centre clinics
Dental:	this is grossly under-estimated as evacuees were advised to wait until reaching their Haven Centre before seeking dental assessment if there was no acute dental problem.
Mental Health:	only acute mental health problems or self-presentations were assessed at East Hills.
Ophthalmic:	evacuees reported having glasses broken or taken at borders, this category only identifies those with severe vision impairment or who identified the need for replacement glasses.
General Medical:	most common follow-up needed was repeat (usually post-menses) urinanalysis.
Public Health:	mostly scabies or head lice. Very few communicable diseases were reported among evacuees apart from tuberculosis, which generally delayed transfer to Haven Centres and is not included in this table.
Specialist:	this category includes evacuees referred to other specialist areas, most commonly for review of cardio-vascular, orthopaedic or diabetic problems.

Clinical presentations for Flights 3 to 5 are summarised in Table 3 according to medical diagnosis category. The majority of presentations were for upper respiratory infections. Most gastrointestinal symptoms were attributed to stress, fatigue and/or motion sickness after air and bus travel.

Finally, summary information was prepared for all people identified as needing follow-up at the Haven Centre. The data for Flight 5 are presented in Table 4.

Discussion

Developing and operating the surveillance system at the Reception Centre demonstrated that such a system could be established in an acute setting and that the primary aims, assessing evacuee health on arrival and monitoring for potential outbreaks, could be achieved. However, the central role that health surveillance has in disease screening, monitoring and surveillance, and in planning, operating and evaluating the health response in such settings needs to be recognised. Effective health surveillance systems can only be established with the appropriate planning, cooperation and commitment of resources.

A number of factors limited the success in achieving the aims of the surveillance system. Planning for meeting national surveillance needs was not incorporated into overall health planning for *Operation Safe Haven* from the outset, and staff were not allocated with specific responsibility for surveillance development and coordination at the Commonwealth level. As a result, advance work was not undertaken with other agencies, such as DIMA, HSA, State health authorities and clinic staff GPs to establish agreed unique identifiers, compatible electronic data collection methods, data linkages and communication and reporting networks.

Time and resource constraints also delayed the implementation of the system at the Reception Centre and impeded the development of a national surveillance system. As a consequence, the secondary aims to document, collate and report health status and service provision for duration of stay and on repatriation could not be achieved. The lack of coordinated database capability and reporting mechanisms between agencies or Haven Centres was a barrier to communication. Time was wasted keying in duplicate data or transferring data from one database to another (for example, Excel to Access).

Limited time and resources are common in emergency settings. The advance development of templates for linked databases would facilitate the process of establishing systems in a crisis. It is anticipated that the evaluation of the health data gathered for the Kosovar evacuees will inform the design and data fields of future data systems. While the experience is recent and the memories are clear, we need to capitalise on the expertise developed during the health responses to recent refugee intakes. We need to plan for future emergency responses, building on the lessons learnt, and develop and trial database templates and reporting mechanisms.

There is a continuing need for health surveillance in acute settings in Australia. In addition to the recent intakes of evacuees from Kosovo and East Timor, Australia has had a sharp rise in the number of illegal immigrants reaching its shores. Many of these are from countries that have not been traditional sources of such arrivals. Between January and November 1999, there were more than 2,700 unauthorised arrivals by air or sea.[9] Pending evaluation of their situation by immigration authorities, such unauthorised arrivals are held in detention facilities, generally placed in remote areas of Australia.

Health surveillance and reporting mechanisms are essential, whether responding to organised or unauthorised refugee intakes. However, while local and State based data arrangements are in place, there is currently no specific collection of national refugee health surveillance data. The establishment of a nationally coordinated acute refugee health surveillance system would provide valuable data for developing refugee health screening protocols and planning refugee health services. It would also ensure that relevant refugee health surveillance expertise was available for future emergency refugee evacuations to Australia.

Recommendations

Health surveillance of the kind developed during *Operation Safe Haven* has not been attempted before in Australia. It has provided us with valuable experience that should underpin our responses to future acute situations, ensuring that we meet international standards with surveillance as an integral part of urgent health responses.[4, 5, 6, 8]

To consolidate this experience and assist in planning, we recommend that policy and guidelines on health surveillance in acute settings be developed. From the

Box 1. Essential requirements for health surveillance in future acute health responses

Requirements for preparation:

- development of policy and guidelines for acute health responses in Australia that recognise nationally coordinated surveillance as an integral part of the response;
- dedicated position(s) at the Commonwealth level to oversee health surveillance;
- development and evaluation of database templates and reporting mechanisms using the experience and knowledge accumulated during recent refugee intakes; and
- national agreement among health departments on the resources expected to be available to support a surveillance system in a crisis, including computer hardware, software and expertise.

Requirements for an acute health response:

- immediate identification of key agency and personnel roles, responsibilities and networks;
- communication networks established early to inform and manage health surveillance;
- collaboration and cooperation among key agencies in the development and operation of information networks and data systems to ensure efficient and consistent data collection, collation, interpretation and reporting;
- a Commonwealth health surveillance officer to oversee the customising of database templates and the linking of databases and reporting systems;
- defined protocols identifying individuals, with designated responsibility to provide or receive surveillance information at each State or centre involved in the health response;
- simple systems for data entry, collation and reporting, that are operational at all centres within expected resource capacity, including computer hardware, software and expertise;
- commitment of resources for the duration of the health response (personnel, computer hardware, and access to telephone lines and the Internet) to permit data entry, management and reporting at State and Commonwealth levels;
- timely data entry and reporting mechanisms to permit effective public health action and/or health service planning and provision;
- data entry systems that include clinically useful information to be established at first point of clinical contact, to ensure timely and complete capture of health information in the clinical setting and reduce the need for duplicate data entry by clinical staff; and
- unique identifiers for each person to identify and link health records for the duration of stay.

experience gained in *Operation Safe Haven*, we have identified key recommendations for planning and operating effective surveillance in the acute setting in Australia (Box 1).

Such preparation, commitment and cooperation among key agencies will be essential to guarantee world standard health surveillance and protection for the people who are the focus of humanitarian exercises such as *Operation Safe Haven*.

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Comment

The changing pattern of arrivals has prompted a decision to review the 1992 NHMRC *Protocol for health screening of boat people arriving in Australia*. These guidelines, which have recently been rescinded, were specifically developed for unauthorised arrivals from South East Asian refugee camps. The review is being undertaken by a Task Group of the National Public Health Partnership, chaired by the Director of the National Centre for Disease Control, Commonwealth Department of Health and Aged Care, Professor John Mathews.

Adverse Events Following Immunisation associated with the 1998 Australian Measles Control Campaign

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Abstract

The Measles Control Campaign (MCC) conducted in Australia from August to November 1998 resulted in a total of 1.7 million school children being vaccinated. This article reports on the Adverse Events Following Immunisation (AEFI) associated with measles-mumps-rubella vaccine (MMR) administered as part of the MCC. Reports of adverse events that occurred within 30 days of administration of the MMR vaccine were assessed by an expert panel that assigned a causality rating to each AEFI. Reports with missing onset dates or uncertain causality were excluded. Eighty-nine AEFI were classified as associated with MMR vaccine and the overall rate of adverse events was 5.24 per 100,000 doses of vaccine administered. Of these 46 were thought to be *certainly* caused by MMR vaccine, 23 were *probably* and 20 were *possibly* associated with the vaccine. Although 46 reactions were categorised to be *certainly* caused by the MMR vaccine, the majority of these were syncopal fits, syncope, local reactions, and allergic reactions that were short-lived, and all of these children recovered. The most commonly occurring adverse reaction was syncopal fit with a rate of 1.24 per 100,000. There was only one anaphylactic reaction, giving a rate of 0.06 per 100,000. The combined rate for anaphylaxis, anaphylactoid and allergic reactions was 1.06 per 100,000 administered doses. The rate of seizures (febrile and afebrile) was 0.30 and encephalopathy was 0.06 per 100,000 doses administered. Of the 89 children who had an AEFI, 43 did not require hospitalisation or medical attention while 13 were seen in an emergency room, 14 were hospitalised and 19 were seen by a doctor. There were no deaths reported resulting from the administration of the MMR vaccine during the period of the campaign. All children who had an AEFI have recovered although 9 children could not be followed up for reasons of confidentiality. The overall rate of adverse events was lower than that observed in the 1994 measles campaign conducted in the United Kingdom. On comparing the risks and benefits of MMR vaccine, the benefits of this MCC far outweigh the incidence of serious adverse events associated with immunisation. *Commun Dis Intell* 2000;24:27-33.

Introduction

In Australia, there have been frequent measles epidemics and measles remains the leading cause of vaccine preventable death.[1-3] Recent seroepidemiologic data from New South Wales, Victoria and South Australia have shown a high proportion of susceptibles,[4] making it likely that there would be a major epidemic in 1998-99 similar to that which occurred in New Zealand.[5] This prompted the formation of the Measles Elimination Advisory Committee (MEAC) in July 1997 by the National Centre for Disease Control, Canberra. MEAC subsequently recommended a national school-based measles vaccination campaign to coincide with the National Health and Medical Research Council (NHMRC) recommendation to bring forward the second dose of the measles-mumps-rubella (MMR) vaccine from 10-16 years to 4-5 years of age. The MMR vaccine used was the M-M-R II – Merck, Sharp and Dohme lyophilised product which contained live attenuated measles virus (Edmonston strain), mumps virus (Jeryl Lynn strain), and rubella virus (Wistar RA 27/3 strain), and 25mcg neomycin per 0.5ml dose.

The Measles Control Campaign (MCC) was conducted in Australia from August to November 1998 and offered all primary school children a one-off free dose of MMR vaccine.[6] A total of 1.7 million children were vaccinated. The aim of this article is to report on the adverse events associated with MMR vaccine administered as part of the MCC.

Methods

Reports were included only if the adverse event occurred within 30 days following administration of MMR vaccine to a primary school aged child and only if the report was received before 1 September 1999. There were three sources of reports.

The first source was the MCC vaccine providers, parents and general practitioners who were asked to report all significant adverse events following immunisation (AEFIs) possibly related to administration of the MMR vaccine to the State and Territory Measles Campaign Coordinators. A protocol was provided to the State and Territory Measles

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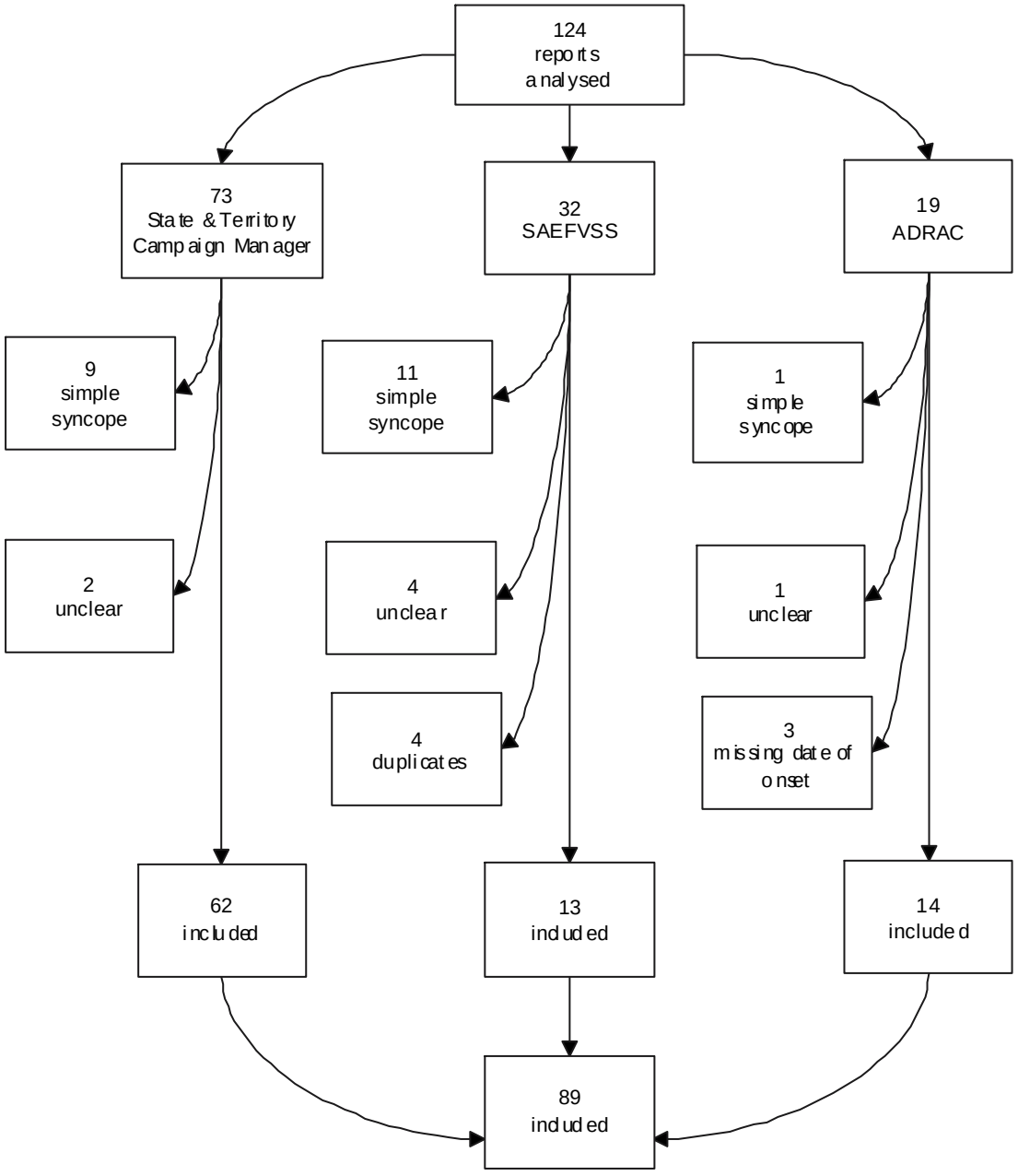
Coordinators to forward reports of anaphylaxis, shock, hypotonic/hyporesponsive episodes, encephalopathy, convulsions, aseptic meningitis, thrombocytopenia, acute flaccid paralysis, death and any other serious adverse events thought to be associated with the vaccination, including hospitalisation. Simple syncope was not required to be reported, unless it resulted in seizure(s) and/or hospitalisation.

Reports were screened by the State and Territory Measles Campaign Coordinators and only serious AEFIs were then notified to the National Campaign Manager by phone and this was followed by a written report. Follow-up of AEFIs was undertaken by States and Territories according to standard procedures.

The second source of adverse event reports was the Serious Adverse Events Following Vaccination Surveillance Scheme (SAEFVSS), a national surveillance scheme initiated through the National Childhood Immunisation Program. The SAEFVSS scheme has been operating since 1995 and has the advantage that local immunisation program directors are able to monitor reports and offer expert advice. Reports are initially reviewed by State and Territory Immunisation Coordinators and forwarded to the National Centre for Disease Control where they are collated and reported in *Communicable Diseases Intelligence*. Adverse event reports related to the MCC were also received by SAEFVSS from all States and Territories.

The third source was the Adverse Drug Reactions Advisory Committee (ADRAC) which has the responsibility of post-marketing surveillance of all drugs including vaccines. ADRAC receives reports from private practitioners, public health providers, hospitals, vaccine manufacturers, and vaccine recipients (or their parents).

Figure 1. Origin of reports of Adverse Events Following Immunisation in the Measles Control Campaign



Reports were collated from these three sources. Duplicate reports were picked up by using identifiers including date of birth, postcode, date of vaccination, adverse event and initials of first and last name. It was not possible to identify duplicate reports in the ADRAC reports as all person identifiers are confidential except for date of birth. All reports were followed up except those originating from ADRAC, because confidential identifying data could not be obtained. Hence, the recovery status of some of the individuals reported to ADRAC was classified as 'unknown'.

A panel comprising three paediatricians with a special interest in immunisation, two medical epidemiologists, and the National Measles Campaign Manager reviewed all reports. The panel classified each AEFI according to modified definitions recommended by the Pan-American Health Organization (Appendix 1).[7] A causality rating was assigned to each AEFI according to a classification developed by ADRAC (Appendix 2). Overall and individual adverse event rates for each AEFI were calculated by dividing the number of events by the number of doses of MMR administered during the MCC.

Results

There was a total of 124 adverse events reported in children aged 4-13 years. Of these, 19 were reported to ADRAC, 32 to SAEFVSS and 73 to the State and Territory Measles Campaign Coordinators (see Figure 1). There were 4 duplicate reports identified in the SAEFVSS that were also reported by the State and Territory Measles coordinators. There were 21 syncopal reactions that did not require any medical attention and were excluded. Following review of the AEFIs by the panel, 10 reports were excluded from further analysis because 3 adverse events had onset dates missing (1 parotitis and 2 rashes) and 7 had an *unclear* causality assigned (Table 1). These were injection site pain, local reaction, hysteria, a child who cried for a prolonged period, a child who claimed temporary loss of eyesight and hearing five minutes after being vaccinated and another child who developed a fever 4 hours after administration of the MMR vaccine. Lastly, there was a 12 year old girl who presented with a temporary myopathy and arthralgia 90 days after MMR vaccination. She complained of weakness in the thigh and truncal muscles and had a high ESR. Investigations including a Magnetic Resonance Imaging (MRI) spine and lumbar puncture were normal and an EMG of her thigh muscle was not diagnostic of a myopathy.

In addition to the 124 AEFIs, 1 case of idiopathic thrombocytopenic purpura in an 11 year old girl, with onset 4 months after MMR vaccine, came to the panel's attention. This case was not notified through any of the three sources, because it occurred late. The panel did not include it in the report because the onset was after the 30 day limit post-vaccine defined before the campaign started.

Thus there were 89 AEFIs for which causality could be assigned, of which 46 were thought to be *certainly* caused by MMR vaccine, 23 were *probably* and 20 were *possibly* associated with the vaccine (Table 1). Sex was recorded on 71 of the reports, with 32 males and 39 females.

Table 1. Assessment of causality of Adverse Events Following Immunisation associated with the Measles Control Campaign

Adverse event	Certain	Probable	Possible	Unclear	Total analysed (excluding unclear)
Allergic reaction	7	2	2		11
Anaphylaxis	1				1
Anaphylactoid reaction	6				6
Arthritis			1		1
Arthralgia		1	1	1	2
Fever			5	1	5
Encephalopathy			1		1
Hyperventilation	2	3			5
Local reaction	3				3
Lymphadeniti'		1			1
'Other reaction' *		6	4	2	10
Parotitis		4		1†	4
Pain				1	0
Rash	1	1	1	4†	3
Seizure			4		4
Seizure (febrile)			1		1
Severe local reaction	2				2
Syncope	5	3			8
Syncopal fit	19	2			21
Total	46	23	20	10	89

* for details see text

† 2 rashes and 1 parotitis had missing onset dates

The overall rate of adverse events based on 89 reports was 5.24 per 100,000 doses of MMR vaccine administered. The most common reaction reported was syncopal fit (23.6%) giving a rate of 1.24 per 100,000 doses administered, followed by allergic reaction with a rate of 0.65 per 100,000 doses administered (Table 2).

Table 2. Rates of Adverse Events Following Immunisation associated with the Measles Control Campaign

Adverse event	Number	Rate per 100,000 doses
Allergic reaction	11	0.65
Anaphylaxis	1	0.06
Anaphylactoid reaction	6	0.35
Arthritis	1	0.06
Arthralgia	2	0.12
Encephalopathy	1	0.06
Fever	5	0.29
Hyperventilation	5	0.29
Local reaction	3	0.18
Lymphadenitis	1	0.06
'Other reaction' *	10	0.59
Parotitis	4	0.24
Rash	3	0.18
Seizure	4	0.24
Seizure (febrile)	1	0.06
Severe local reaction	2	0.12
Syncope	8	0.47
Syncopal fit	21	1.24
Total	89	5.24

* for details see text

Fifty-seven per cent of reactions occurred within 1 hour of administration of the vaccine. These were syncope, syncopal fit, hyperventilation, allergic, anaphylactoid, anaphylactic and local reactions.

Forty-three children did not require hospitalisation or to be seen by a doctor, while 19 children were seen by a doctor, 13 were seen in an emergency room, and another 14 were hospitalised (3 following syncope, 1 following a seizure, 4 following hyperventilation, 2 with fever, 2 with anaphylactoid reactions, 1 with a local reaction and 1 with an 'other' reaction). Seventy-nine children are known to have recovered and the outcome was unknown for the remaining 9 because of ADRAC's confidential data. There were no deaths.

Allergic type reactions/ anaphylactoid/ anaphylaxis reactions

Twelve allergic, 6 anaphylactoid and 1 anaphylactic reaction were reported. Except for 4 allergic reactions, all of these reactions occurred within 1 hour of administration of the vaccine and were classified as *certainly* due to the vaccine. The anaphylactic reaction occurred 3 minutes after the child was vaccinated. Of the 6 anaphylactoid reactions, 4 children developed symptoms within 5 minutes of administration of MMR vaccine, 1 child developed them after 15 minutes and another after 60 minutes.

Adrenaline was administered to a total of 13 children, 7 for immediate allergic reactions (6 anaphylactoid and one anaphylaxis) and for 6 children without immediate allergic reactions (4 syncopes and 2 hyperventilation). There were no adverse effects of adrenaline in these children. Two children with anaphylactoid reactions were admitted to hospital whilst the remaining children with anaphylactoid reactions and the one with an anaphylactic reaction were treated in the hospital emergency department and then discharged. All the children recovered. The rate for anaphylactic, anaphylactoid and allergic reactions was 0.06, 0.35 and 0.65 per 100,000 administered doses (respectively) with an overall rate for any immediate allergic-type reaction of 1.06 per 100,000 administered doses.

Neurological reactions

There were 4 children reported with afebrile seizures, 1 with a febrile seizure and 1 with encephalopathy. All these children have recovered and the reactions were considered to be *possibly* related to the MMR vaccine. The rate of febrile seizures was 0.06, afebrile seizures 0.24 and any seizure 0.30 per 100,000 doses of MMR administered. The rate of encephalopathy was 0.06 per 100,000 doses administered.

The onset was less than 24 hours after vaccination for the child with a febrile seizure and for 1 of the 4 with an afebrile seizure. The latter was a 7 year old child who had a seizure lasting 20 minutes the day after receiving MMR vaccine. The child had no previous history of epilepsy and was taken to hospital. The afebrile seizures in the other 3 children occurred at 12, 15 and 28 days respectively after administration of the MMR vaccine. The recovery status of the 7 year old girl whose seizure occurred 12 days after vaccination is not known as the event was reported to ADRAC.

A 10 year old boy with a history of a viral infection 2 weeks prior to MMR vaccination had a focal seizure 15 days after vaccination. Three days later the child developed puffiness of the face, possibly related to the mumps component of the MMR vaccine. The history and an electroencephalogram (EEG) were considered diagnostic of benign Rolandic epilepsy. The child was treated with anti-convulsants and has recovered.

A 6 year old girl who had a seizure 28 days after receiving her second MMR vaccine was later diagnosed as having juvenile absence seizures by her paediatrician. The EEG findings were abnormal and diagnostic of absence seizures. The child is being treated with anti-convulsants and her symptoms are under control.

There was only one reported case of encephalopathy; an 8 year old boy who developed stomach pain, anorexia, headache, ear infection and demonstrated aggressive behaviour commencing 4 days after being vaccinated with MMR vaccine. He recovered in a week and did not require hospitalisation. This was considered to be a transient encephalopathy *possibly* related to the MMR vaccine.

Twenty-one children had syncopal fits that occurred within 1 hour of receiving the MMR vaccine. The rate of syncopal fits was 1.24 per 100,000 administered doses. This was

the most commonly reported adverse event and occurred equally in boys and girls. Five of the children who experienced a syncopal fit were seen by a doctor and 2 children were observed in hospital. None of the children with syncopal fits received adrenaline and all 29 recovered.

Syncope

There were 8 children reported with syncope who received medical attention (3 were hospitalised, 3 were seen in an emergency department and 2 were seen by a doctor). There were many more reports of simple syncope in children, which were reviewed by the State and Territory Campaign Managers and not forwarded to the National Campaign Manager.

Arthritis and arthropathies

Two cases of arthralgia and 1 case of arthritis were reported giving a rate of 0.12 and 0.06 per 100,000 administered doses (respectively). The arthritis developed in a 6 year old girl 1 day after MMR vaccine. The reaction was considered to be *possibly* related to the MMR vaccine. The onset of arthralgia in 2 children occurred 5 and 14 days respectively after MMR vaccination. All have recovered.

Parotitis

There were 4 parotitis reactions reported, occurring at 2 hours, 24 hours, 8 days and 10 days after receiving the MMR vaccine. All of the parotitis reactions were considered to be *probably* related to MMR vaccine. The rate of parotitis was 0.24 per 100,000 administered doses.

Local reaction/ severe local reaction

There were 3 local reactions and another 2 severe local reactions reported. All of these reactions were considered to be *certainly* caused by the MMR vaccine and all of the children have recovered. The rate of this reaction was 0.3 per 100,000 administered doses.

Lymphadenitis

There was only 1 case of lymphadenitis reported, which occurred 21 days after receipt of the vaccine and the child has recovered.

Other reactions

Ten children had reactions that were categorised as 'other reactions'. Of these, 2 children presented with a measles-like illness, 4 with a rubella-like illness, 1 had hallucinations and 1 was diagnosed as having hemiplegic migraine. In addition there was 1 child who had a late onset fever with headache and another child with fever and a stiff neck. The 4 rubella-like reactions occurred on 1, 3 , 8, and 12 days after receiving the MMR vaccine while the 2 measles-like reactions occurred 11 and 21 days after MMR vaccination. The fevers occurred 10 and 13 days after receiving the vaccine.

An 8 year old boy who presented with symptoms of encephalopathy 7 days after receiving MMR vaccine was initially diagnosed as having viral encephalitis. Although this child recovered from the acute episode with no neurological deficit, he had another attack 3 months later and has subsequently been diagnosed as having familial hemiplegic migraine. This child had received a previous dose of MMR. It is possible that the MMR viraemia triggered the episode, so the adverse event in this child was considered to be *possibly* related to the MMR vaccine. The child has recovered.

A 7 year old boy started hallucinating 2 days after receiving MMR vaccination and has made a complete recovery according to his parents. The child had a normal computerised tomography (CT) scan 3 weeks after onset of the reaction. This reaction was considered to be *possibly* related to MMR vaccine.

All of the reactions categorised as 'other reactions' were considered to be *possibly* related to the MMR vaccine. All children have recovered.

Discussion

Among the 1.7 million children vaccinated during the period of the MCC there were 89 AEFIs reported in association with MMR vaccine. This gave an overall rate of AEFIs of 5.24 per 100,000 administered doses. This is lower than the rate of 14.9 per 100,000 administered doses reported during the United Kingdom (UK) campaign in 1994 when 8 million children were vaccinated with measles-rubella vaccine and 1,202 experienced adverse reactions.[8] The rates of almost all of the individual adverse events reported were lower than those reported from the UK, except for the rate of seizures which was a little higher than the rate seen in the UK.[8]

There were no deaths reported resulting from the administration of MMR vaccine during the period of the campaign and all the children have recovered although 9 children could not be followed up for reasons of confidentiality (2 with fever, 3 with parotitis, 2 with rashes, 1 with an afebrile seizure and 1 with a measles-like illness).

Although 46 reactions were categorised to be *certainly* caused by the MMR vaccine, the majority of these were syncopal fits, syncope, local reactions, and allergic reactions that were short-lived, and all these children recovered.

The combined rate for anaphylaxis, anaphylactoid and allergic reactions was 1.06 per 100,000 administered doses which is also lower than the UK rate of 1.6 per 100,000 administered doses.[9] There was only 1 anaphylactic reaction, giving a rate of 0.06 per 100,000 as compared to 1 per 100,000 in the UK.[8] It is possible that the prompt use of adrenaline by the campaign nurses for children with anaphylactoid reactions averted more cases of anaphylaxis. This is a credit to the nurses who recognised the seriousness of these reactions.

Simple febrile seizures occur occasionally after measles or MMR vaccination and generally have no sequelae. An increased risk of febrile seizures may occur in children with a personal history or first degree family history of seizures.[10] A study in the United States of America linking vaccination records with computerised hospital admissions in five districts suggested that 67% of admissions with febrile convulsions 6 to 11 days after the first dose of MMR vaccination were attributable to the measles component of the vaccine (risk 1 in 3,000 doses) in children aged 12-24 months.[11] The overall rate of seizures (febrile and afebrile) in the MCC was 0.30 per 100,000 doses (1.76 per 600,000) which is slightly higher than the 1 in 600,000 reported in the UK.[8] The rate in the UK was based both on

reactions which were suspected to be vaccine-related and events thought to be causally unrelated so may be an overestimate.

One case of encephalopathy was notified, and this was considered only *possibly* related to the vaccination. The incidence of encephalitis after measles vaccination is approximately 1 in a million doses of vaccine,[12] whereas natural measles virus infection causes post-infectious encephalomyelitis in approximately 1 per 1,000 infected persons.[13] The rate of thrombocytopenic purpura in children receiving their first dose of MMR vaccine in Finland was 1 in 30,000[14] which was similar to the Swedish rate of 1 per 37,000.[15] There were no known cases of thrombocytopenic purpura considered to be causally related to the MMR vaccine in the MCC. Two cases (1 in 4 million doses) were reported in the United Kingdom's campaign. In comparison, thrombocytopenia caused by rubella disease varies in severity and incidence and has been reported as frequently as 1 in 3,000 cases.[16]

The overall reported rate of adverse events was low. It is not considered that this was due to under-reporting, but due to the fact that the campaign was targeted at school children. Most school children were receiving their second dose of MMR, so the incidence of adverse reactions would be expected to be lower than in infants receiving their first dose of MMR. The reactions reported in older children probably affect mainly those susceptible to the vaccine virus. As most of the data on adverse events relate to primary vaccination of infants, it may be inappropriate to compare the rates in school children receiving their second dose, except to other school-aged children receiving second doses of vaccine in measles campaigns in other countries.

The aim of the MCC was to avert an anticipated measles epidemic similar to the one which occurred in New Zealand in 1997.[5] Therefore the incidence of serious adverse events should be evaluated against the number of measles cases prevented through the campaign. On comparing the risks and benefits of MMR vaccine, the benefits of this MCC far outweigh the incidence of serious adverse events associated with immunisation.

Appendix 1

Definitions of adverse events

Allergic reaction

Characterised by one or more of the following:

- skin manifestations (for example; hives, eczema, pruritus);
- wheezing or shortness of breath due to bronchospasm; and/or
- facial or generalised oedema.

Anaphylactoid reaction (acute hypersensitivity reaction)

Exaggerated allergic reaction, occurring within 2 hours of immunisation, characterised by one or more of the following:

- wheezing and shortness of breath due to bronchospasm;
- laryngospasm/laryngeal oedema; and/or
- one or more skin manifestations, for example, hives, facial oedema, generalised oedema.

Anaphylaxis

Circulatory failure (for example; alteration of the level of consciousness, low arterial blood pressure, weakness or absence of peripheral pulses, cold extremities secondary to reduced peripheral circulation, flushed face and increased perspiration) occurring within minutes of immunisation with or without bronchospasm and/or laryngospasm/laryngeal oedema.

Arthralgia

Joint pain without redness or swelling.

Arthritis

Joint pain together with redness and/or swelling.

Encephalopathy

Diagnosis must be made by a physician.

Encephalopathy is an acute onset of major neurological illness temporally linked with immunisation and characterised by any two or more of the following three conditions:

- seizures;
- severe alteration in level of consciousness or mental status (behaviour and/or personality) lasting for one day or more; and/or
- focal neurological signs which persist for one day or more.

Encephalitis

Diagnosis must be made by a physician.

Encephalitis is characterised by the above mentioned symptoms and signs of cerebral inflammation and, in many cases, CSF pleocytosis and/or virus isolation.

Fever

Only very high fever should be reported, for example, over 40.5^{o} C.

Local reaction (severe)

Redness and/or swelling centred at the site of injection and one or more of the following:

- swelling beyond the nearest joint;
- pain, redness and swelling of more than 3 days duration; and/or
- requires hospitalisation.

Lymphadenitis (includes suppurative lymphadenitis)

Occurrence of either:

- at least one lymph node, 1.5cm in diameter or larger; or
- a draining sinus over a lymph node.

Almost exclusively caused by BCG on the same side as inoculation (mostly axillary).

Parotitis

Swelling and/or tenderness of parotid gland or glands.

Rash

Severe or unusual rash.

Seizure

- seizure lasting from several minutes to more than 15 minutes and not accompanied by focal neurological signs or symptoms;
- febrile seizure: with fever >37.5° C;
- afebrile seizure: without fever.

Syncope

Transient loss of consciousness.

Syncopal fit

Tonic/clonic seizure or incontinence occurring in association with syncope.

Thrombocytopenia

Platelet count <150 x 10/L. Diagnosis must be made by a physician.

Other severe or unusual events

Any unusual event that does not fit into any of the categories listed above, but were of medical or epidemiologic interest should be reported with a detailed description of the clinical features.

Appendix 2

Assessment of causality

The panel used the basic ADRAC criteria in determining causality ratings, which are consistent with international criteria (WHO), as follows:

Certain

- confirmed by rechallenge; and/or
- confirmed by laboratory data; and/or
- reaction onset is immediately following drug/vaccine administration (within 60 minutes if injections was the method of administration); and/or
- precise spatial correlation with administration (for example, at the exact site of injection).

Probable

- temporal or spatial (for example, skin) correlation with administration; and/or
- recovery on withdrawal of the drug if no other drug is withdrawn and no therapy given; and/or
- an uncommon clinical phenomenon associated with the administration of the drug/vaccine in the absence of other factors.

Possible

- a possible alternative explanation exists; and/or
- more than one drug/vaccine is suspected; and/or
- data are incomplete; and/or
- recovery follows withdrawal of more than one drug/vaccine; and/or
- time relationship is not clear; and/or
- outcome of the reaction is not recorded and/or
- recovery follows therapy in addition to withdrawal of the drug/vaccine.

Unclear

This classification is accorded where a clinical event may well be explained as arising from factors related to underlying disease, or other non-vaccine aetiology. Reports given this classification are not used in further evaluation or statistical studies. However, they are held in case future developments alter their significance.

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Enhancement of the National Notifiable Diseases Surveillance System's data collection

The National Notifiable Diseases Surveillance System (NNDSS), administered from the National Centre for Disease Control (NCDC), has collected well over half a million disease notifications from States and Territories over the last decade. This information has been collected electronically, consolidated and reported in *Communicable Diseases Intelligence* every issue.

The electronic dataset for disease notifications has been in use since 1991 and has not been significantly updated in this time. In the past, this dataset has been more a recommendation to States and Territories rather than a rigid specification. As such, a 'best attempt' approach has been adopted in delivering the data to the Commonwealth. This has resulted in a multitude of logistical problems with interpreting, translating and consolidating notifications into a uniform dataset for analysis by epidemiological staff.

The Surveillance and Management Section at NCDC has undertaken a number of initiatives to improve the timeliness and quality of surveillance data for analysis and dissemination.

The success of these new initiatives will depend on each State and Territory's ability to make the appropriate changes to their IT systems and revise their workflows and procedures in order to handle the changed information requirements. All of this will require consultation and adequate preparation time.

A Microsoft Word 97 document (110 k-bytes) describing the specifications for sending information to the new system can be obtained by sending an e-mail message to cdsm_nnd@health.gov.au and specifying the word 'SPECDOC' in the subject field.

Further information can be obtained by telephoning either Alison Milton on (02) 6289 8245 or Peter Mazzarol on (02) 6289 8107.

Changes to the Editorial team

As of this issue of *CDI*, February 2000, we welcome our new Editor, Angela Merianos. We look forward to Angela's input to the ongoing development of *CDI*, and the expertise and experience Angela brings to us. Our previous Editor, Jenny Thomson, remains with us in a new role as Associate Editor. Jenny will be involved in all *CDI* issues and content related to immunisation.

Meningococcal disease workshop announcement

Meningococcal disease in Australia

Surveillance and vaccine policy — 2000 and beyond

- At the ***National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases***, The New Children's Hospital, Westmead, New South Wales.
- 11am Friday 14th April 2000 to 3pm Saturday 15th April 2000.
- No registration fee.
- Those interested in attending this meeting should contact Kate Wyllie:

  Fax: 61 2 9845 3082 or Email: katew2@nch.edu.au

  to obtain a registration form and a copy of the draft program.

This meeting will consider the disease burden from meningococcal infection in Australia and the requirements for surveillance and vaccination. The meeting will provide an opportunity to compare the epidemiology of meningococcal disease in Australia, New Zealand, the United Kingdom and North America and to discuss the case for routine childhood immunisation.

Meningococcal conjugate vaccines are now developed for serogroup C and are under development for serogroups A and B. The United Kingdom introduced conjugate meningococcal C vaccines into their routine childhood schedule in late 1999.

Communicable Diseases Surveillance

Highlights

Communicable Diseases Surveillance consists of data from various sources. The National Notifiable Diseases Surveillance System (NNDSS) is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The *CDI* Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme. The Australian Sentinel Practice Research Network (ASPREN) is a general practitioner-based sentinel surveillance scheme. In this report, data from the NNDSS are referred to as 'notifications' or 'cases', whereas those from ASPREN are referred to as 'consultations' or 'encounters' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Vaccine preventable diseases

A total of 467 notifications was received in this reporting period, which is an increase on the previous reporting period (332), and similar to the same period in 1999 (427). The increase in notifications was the result of continuing pertussis activity in most States and Territories. The number of pertussis notifications was 419 over this period compared with 304 in the previous period. In this 4 week period increases were seen in the number of notified cases in Queensland (a 164% increase, from 44 to 116 cases) and New South Wales (a 93% increase, from 74 to 143 cases), and there was a 55% decrease (from 87 to 39 cases) in the number of notified cases from Tasmania. There was no increase in the number of notifications of other vaccine preventable diseases.

Vectorborne diseases

There was a 211% increase in notifications of Ross River virus infection this period (from 135 to 420), but this is less than the number of notifications for the same period in 1999 (444). The greatest number of notifications was received from Queensland (228 cases, a 744% increase from 27 last period); followed by Western Australia (113 cases, a 53% increase from 74 last period). The number of year to date notifications (442) was similar to last year (454).

A 300% increase in dengue notifications was noted in this reporting period (from 9 to 36 cases). Sixty-nine per cent of cases (25) were from the Northern Territory and 30% from Queensland (9). This reflects the importation of dengue from East Timor into the Northern Territory and local transmission in Far North Queensland.

Gastrointestinal diseases

There continued to be increased numbers of notifications of hepatitis A during this period, with a 52% increase from last period (75 to 114). Most cases (31, 27%) were from Victoria, followed by New South Wales (28, 24%) then Western Australia (22, 19%). The year to date number of notifications (120) was less than that for last year (151).

One case of haemolytic uraemic syndrome (HUS) was reported in this period, from New South Wales.

Tables

There were 6,441 notifications to the National Notifiable Diseases Surveillance System (NNDSS) in the four week period, 5 January to 1 February 2000 (Tables 1 and 2). The number of reports for selected diseases have been compared with historical data for corresponding periods in the previous three years (Figure 1).

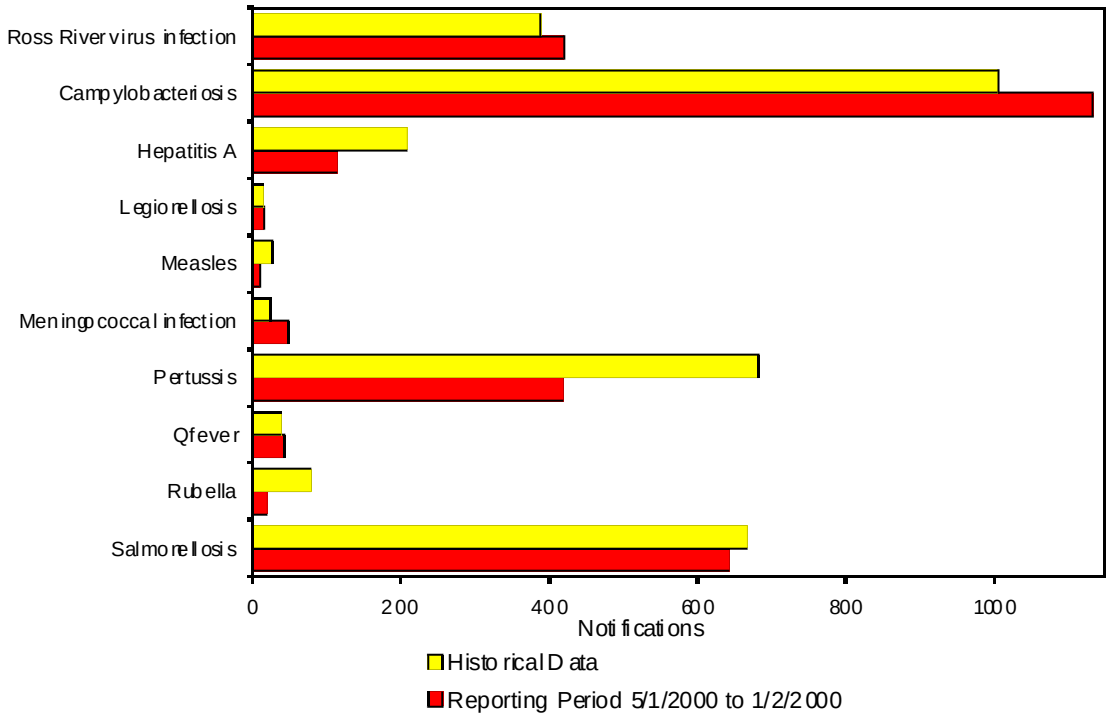
There were 1,516 reports received by the *CDI* Virology and Serology Laboratory Reporting Scheme (LabVISE) in the four week period, 30 December 1999 to 26 January 2000 (Tables 3 and 4).

The Australian Sentinel Practice Research Network (ASPREN) data for weeks 1 to 3, ending 23 January 2000, are included in this issue of *CDI* (Table 5).

Alteration to presentation of the NNDSS historical figure

As of February 2000, the colours used in this figure have been changed from previous figures. The current period data are now represented by the darker bar, and the historical data by the lighter bar.

Figure 1. Selected National Notifiable Diseases Surveillance System reports, and historical data[1,2]



1. The historical data are the averages of the number of notifications in the corresponding 4 week periods of the last 3 years and the 2 week periods immediately preceding and following those.
2. From February 2000, the bar representing notifications in the current reporting period is the darker colour, and the historical data are represented by the lighter coloured bar.

Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 5 January to 1 February 2000

Disease[1]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2000	This period 1999	Year to date 2000[2]	Year to date 1999
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
H. influenzae type b infection	0	1	0	1	0	0	0	0	2	4	2	4
Measles	1	1	0	2	0	0	5	1	10	6	10	7
Mumps	1	3	0	0	3	0	2	7	16	4	17	4
Pertussis	6	143	0	116	20	39	93	2	419	384	434	398
Rubella[3]	0	6	0	9	0	0	5	0	20	29	21	29
Tetanus	0	0	0	0	0	0	0	0	0	0	0	0

1. No notification of poliomyelitis has been received since 1978.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. Includes congenital rubella.

Table 2. Notifications of diseases received by State and Territory health authorities in the period 5 January to 1 February 2000.

Disease[1,2,3]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2000	This period 1999	Year to date 2000[4]	Year to date 1999
Arbovirus infection (NEC)	0	0	0	0	0	0	1	0	1	20	2	21
Barmah Forest virus infection	0	12	1	27	0	0	2	1	43	48	44	49
Brucellosis	0	0	0	3	0	0	0	0	3	3	3	3
Campylobacteriosis[5]	18	-	15	408	142	41	408	101	1,133	1,216	1,183	1,268
Chancroid	0	0	0	0	0	0	0	0	0	0	0	0
Chlamydial infection (NEC)[6]	20	192	60	423	74	19	231	110	1,129	1,002	1,200	1,015
Cholera	0	0	0	0	0	0	0	0	0	0	0	0
Dengue	0	2	25	9	0	0	0	0	36	61	41	61
Donovanosis	0	0	2	1	NN	0	0	0	3	3	3	3
Gonococcal infection[7,*]	1	97	61	147	21	3	62	41	433	465	467	473
Haemolytic uraemic syndrome	NN	1	0	0	0	0	NN	0	1	0	1	0
Hepatitis A	0	28	11	16	6	0	31	22	114	147	120	151
Hepatitis B incident	1	3	8	3	0	0	9	4	28	29	37	29
Hepatitis B unspecified[8]	2	167	0	84	0	4	105	51	413	517	432	530
Hepatitis C incident	0	2	0	-	6	0	3	2	13	26	14	26
Hepatitis C unspecified[8]	19	384	6	348	87	25	134	112	1,115	1,456	1,179	1,610
Hepatitis (NEC)[9]	0	0	0	0	0	0	0	NN	0	0	0	0
Hydatid infection	0	NN	0	0	0	0	2	0	2	3	2	3
Legionellosis	0	0	0	2	3	0	5	5	15	19	16	19
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0
Leptospirosis	0	4	0	9	0	0	7	0	20	32	20	32
Listeriosis	0	2	1	1	0	0	1	2	7	6	8	6
Malaria	2	14	5	43	1	0	5	1	71	54	73	61
Meningococcal infection	0	20	0	9	1	3	14	2	49	38	54	39
Ornithosis	0	NN	0	NN	0	0	2	2	4	8	4	8
Q Fever	0	11	0	29	2	0	1	0	43	46	46	46
Ross River virus infection	2	26	39	228	6	0	6	113	420	444	442	454
Salmonellosis (NEC)	28	103	35	211	52	15	106	93	643	853	687	888
Shigellosis[5]	0	-	8	7	4	0	6	9	34	53	38	53
SLTEC, VTEC[10]	NN	0	0	NN	6	0	NN	NN	6	4	6	4
Syphilis[11]	1	52	24	58	3	2	0	1	141	137	144	141
Tuberculosis	0	14	2	9	0	2	0	12	39	66	39	68
Typhoid[12]	0	3	0	0	1	0	3	0	7	3	8	4
Yersiniosis (NEC)[5]	0	-	0	7	1	0	0	0	8	25	9	25

1. Diseases preventable by routine childhood immunisation are presented in Table 1.
2. For HIV and AIDS, see Tables 6 and 7.
3. No notifications have been received during 2000 for the following rare diseases: lymphogranuloma venereum, plague, rabies, yellow fever, or other viral haemorrhagic fevers.
4. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
5. Not reported for NSW because it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.
6. WA: genital only.
7. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
8. Unspecified numbers should be interpreted with some caution as the magnitude may be a reflection of the numbers of testings being carried out.
9. Includes hepatitis D and E.
10. Infections with *Shiga*-like toxin (verotoxin) producing *E. Coli* (SLTEC/VTEC).
11. Includes congenital syphilis.
12. NSW, Qld: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

* Complete data for gonococcal infection were not received from Victoria this period.

Table 3. Virology and serology laboratory reports by contributing laboratories for the reporting period 30 December 1999 to 26 January 2000[1]

State or Territory	Laboratory	This period	Total this period[2]
Australian Capital Territory	The Canberra Hospital	4	52
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	1	1
	New Children's Hospital, Westmead	16	24
	Repatriation General Hospital, Concord	0	0
	Royal Prince Alfred Hospital, Camperdown	0	0
	South West Area Pathology Service, Liverpool	1	39
Queensland	Queensland Medical Laboratory, West End	597	644
	Townsville General Hospital	0	0
South Australia	Institute of Medical and Veterinary Science, Adelaide	262	314
Tasmania	Northern Tasmanian Pathology Service, Launceston	0	0
	Royal Hobart Hospital, Hobart	0	0
Victoria	Monash Medical Centre, Melbourne	15	19
	Royal Children's Hospital, Melbourne	87	142
	Victorian Infectious Diseases Reference Laboratory, Fairfield	0	0
Western Australia	PathCentre Virology, Perth	490	1,189
	Princess Margaret Hospital, Perth	43	38
	Western Diagnostic Pathology	0	0
Total		1,516	2,462

1. The complete list of laboratories reporting for the 12 months, January to December 2000, will appear in every report from January 2000 regardless of whether reports were received in this reporting period. Reports are not always received from all laboratories.
2. Total reports include both reports for the current period and outstanding reports to date.

Table 4. Virology and serology laboratory reports by State or Territory[1] for the reporting period 30 December 1999 to 26 January 2000, and total reports for the year[2]

	State or Territory[1]								This period 2000	This period 1999	Year to date 2000[3]	Year to date 1999
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Measles, mumps, rubella												
Measles virus	0	0	0	0	0	-	0	1	1	5	1	4
Mumps virus	0	0	0	0	0	-	0	5	5	4	5	3
Rubella virus	0	0	0	2	1	-	0	2	5	6	4	4
Hepatitis viruses												
Hepatitis A virus	0	0	3	2	2	-	1	13	21	37	20	36
Arboviruses												
Ross River virus	0	2	36	66	5	-	0	74	183	132	156	128
Barmah Forest virus	0	1	4	14	0	-	0	3	22	20	19	20
Dengue not typed	0	0	17	0	0	-	0	27	44	8	40	7
Flavivirus (unspecified)	0	0	1	1	0	-	0	0	2	9	2	9
Adenoviruses												
Adenovirus type 3	0	0	0	0	2	-	0	0	2	2	1	2
Adenovirus type 5	0	0	0	0	1	-	0	0	1	0	1	0
Adenovirus type 40	0	0	0	0	0	-	0	2	2	7	2	6
Adenovirus not typed/pending	0	0	0	1	28	-	8	38	75	107	67	94
Herpes viruses												
Herpes virus type 6	0	0	0	0	0	-	0	1	1	0	1	0
Cytomegalovirus	1	1	1	16	32	-	16	24	91	113	79	104
Varicella-zostervirus	0	4	0	37	10	-	8	59	118	197	112	177
Epstein-Barr virus	0	7	4	91	62	-	7	21	192	266	174	257

Table 4. Virology and serology laboratory reports by State or Territory[1] for the reporting period 30 December 1999 to 26 January 2000, and total reports for the year[2] (continued)

	State or Territory[1]								This period 2000	This period 1999	Year to date 2000[3]	Year to date 1999
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Other DNA viruses												
Molluscum contagiosum	0	0	0	0	0	-	0	1	1	1	1	1
Parvovirus	0	0	0	0	0	-	0	15	15	33	14	32
Picorna virus family												
Rhinovirus (all types)	0	5	0	0	0	-	0	10	15	23	12	20
Enterovirus not typed/pending	0	0	0	0	0	-	0	34	34	52	30	47
Ortho/paramyxoviruses												
Influenza A virus	0	0	1	6	29	-	0	29	65	54	61	50
Influenza B virus	0	0	0	1	2	-	0	0	3	10	3	10
Parainfluenza virus type 1	0	4	0	0	2	-	0	1	7	2	7	2
Parainfluenza virus type 3	1	0	0	2	5	-	1	23	32	66	29	61
Respiratory syncytial virus	0	6	0	2	5	-	6	26	45	46	39	40
Other RNA viruses												
Rotavirus	2	6	0	0	24	-	12	5	49	71	42	61
Other												
Chlamydia trachomatis not typed	0	6	31	95	37	-	4	68	241	244	223	231
Chlamydia psittaci	0	0	0	0	0	-	0	2	2	6	1	6
Mycoplasma pneumoniae	0	1	1	26	7	-	9	6	50	114	47	111
Coxiella burnetii (Q fever)	0	2	0	5	1	-	0	0	8	12	8	12
Streptococcus group A	0	2	10	32	0	-	0	0	44	0	41	0
Yersinia enterocolitica	0	0	0	1	0	-	0	0	1	1	1	1
Brucella species	0	0	0	1	0	-	0	0	1	2	1	2
Bordetella pertussis	0	1	0	36	6	-	30	2	75	54	68	54
Legionella longbeachae	0	0	0	0	2	-	0	4	6	8	5	8
Cryptococcus species	0	0	0	0	0	-	1	0	1	0	1	0
Leptospira species	0	0	0	4	0	-	0	0	4	0	3	0
Treponema pallidum	0	2	24	22	0	-	0	1	49	0	46	0
Entamoeba histolytica	0	0	0	1	0	-	0	1	2	0	2	0
Echinococcus granulosus	0	0	0	0	0	-	0	1	1	0	1	0
Total	4	50	133	464	263	-	103	499	1,516	1,712	1,370	1,600

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
2. From January 2000 data presented are for reports with report dates in the current period. Previously reports included all data received in that period.
3. Totals comprise data from all laboratories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

\- No data received this period.

Table 5. Australian Sentinel Practice Research Network reports, weeks 1 to 3, 2000

Week number	1		2		3	
Week ending on	9 January 2000		16 January 2000		23 January 2000	
Doctors reporting	63		59		62	
Total encounters	6,040		6,732		7,640	
Condition	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Influenza	11	1.8	11	1.6	14	1.8
Chickenpox	9	1.5	8	1.2	10	1.3
Gastroenteritis	69	11.4	55	8.2	67	8.8
Gastroenteritis with stool culture	6	1.0	10	1.5	12	1.6
ADT immunisations	32	5.3	51	7.6	62	8.1

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The system coordinates the national surveillance of more than 40 communicable diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). Notifications of these diseases are made to State and Territory health authorities under the provisions of their respective public health legislations. De-identified core unit data are supplied fortnightly for collation, analysis and dissemination. For further information, see CDI 2000;24:6.

LabVISE is a sentinel reporting scheme. Currently 17 laboratories contribute data on the laboratory identification of viruses and other organisms. This number may change throughout the year. Data are collated and published in Communicable Diseases Intelligence every four weeks. These data should be interpreted with caution as the number and type of reports received is subject to a number of biases. For further information, see CDI 2000;24:10.

ASPREN currently comprises about 120 general practitioners from throughout the country. Between 7,000 and 8,000 consultations are reported each week, with special attention to 14 conditions chosen for sentinel surveillance in 2000. CDI reports the consultation rates for five of these. For further information, including case definitions, see CDI 2000;24:7-8.

Additional Reports

Sentinel Chicken Surveillance Programme

Sentinel chicken flocks are used to monitor flavivirus activity in Australia. The main viruses of concern are Murray Valley encephalitis (MVE) and Kunjin which cause the potentially fatal disease Australian encephalitis in humans. Currently 28 flocks are maintained in the north of Western Australia, seven in the Northern Territory, nine in New South Wales and ten in Victoria. The flocks in Western Australia and the Northern Territory are tested year round but those in New South Wales and Victoria are tested only from November to March, during the main risk season.

Results are coordinated by the Arbovirus Laboratory in Perth and reported bimonthly. For more information see CDI 2000;24:8-9

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5. Berrimah Agricultural Research Centre, Northern Territory
6. PathCentre, Western Australia
7. Department of Health and Community Services, Northern Territory

Sentinel chicken serology was carried out for 25 of the 27 flocks in Western Australia in November and December 1999. There were no seroconversions to flaviviruses during this period. An additional sentinel chicken flock has been set up at Marble Bar in the Pilbara region taking the total number of flocks in Western Australia to 28.

Serum samples from all of the seven Northern Territory sentinel chicken flocks were tested in our laboratory in November and December 1999. There were no new seroconversions to flaviviruses.

The sentinel chicken programs in New South Wales and Victoria commenced in November 1999. There have been no seroconversions to flaviviruses over this period.

HIV and AIDS Surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, and annually in HIV/AIDS and related diseases in Australia Annual Surveillance Report. The reports are available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 9332 4648; Facsimile: (02) 9332 1837; http://www.med.unsw.edu.au/nchecr.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 to 30 September 1999, as reported to 31 December 1999, are included in this issue of CDI (Tables 6 and 7).

Table 6. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 September 1999, by sex and State or Territory of diagnosis

										Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1999	This period 1998	Year to date 1999	Year to date 1998
HIV diagnoses	Female	0	1	0	0	1	0	1	0	3	6	52	68
	Male	1	20	0	12	3	0	5	1	42	55	440	478
	Sex not reported	0	3	0	0	0	0	0	0	3	0	4	5
	Total[1]	1	24	0	12	4	0	6	1	48	61	496	551
AIDS diagnoses	Female	0	0	0	0	1	0	0	0	1	0	8	13
	Male	0	4	0	0	1	0	0	0	5	19	82	219
	Total[1]	0	4	0	0	2	0	0	0	6	19	90	232
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	1	3	7
	Male	0	5	0	3	0	0	1	0	9	18	67	113
	Total[1]	0	5	0	3	0	0	1	0	9	19	71	120

1. Persons whose sex was reported as transgender are included in the totals.

Table 7. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 30 September 1999, by sex and State or Territory

		State or Territory								
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	25	594	9	142	61	6	211	111	1,159
	Male	192	10,705	107	1,942	669	79	3,847	893	18,434
	Sex not reported	0	260	0	0	0	0	24	0	284
	Total [1]	217	11,578	116	2,091	730	85	4,095	1,007	19,919
AIDS diagnoses	Female	8	175	0	47	25	3	67	26	351
	Male	86	4,571	35	803	344	44	1,599	344	7,826
	Total [1]	94	4,758	35	852	369	47	1,673	372	8,200
AIDS deaths	Female	3	114	0	31	15	2	47	16	228
	Male	65	3,157	24	560	229	28	1,252	245	5,560
	Total [1]	68	3,279	24	593	244	30	1,305	262	5,805

1. Persons whose sex was reported as transgender are included in the totals.

Childhood Immunisation Coverage

Tables 8 and 9 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

The data show the percentage of children fully immunised at age 12 months for the cohort born between 1 July and 30 September 1998 and at 24 months of age for the cohort born between 1 July and 30 September 1997, according to the Australian Standard Vaccination Schedule.

A full description of the methodology used can be found in CDI 1998;22:36-37.

Table 8. Percentage of children immunised at 1 year of age, preliminary results by disease and State for the birth cohort 1 July to 30 September 1998; assessment date 31 December 1999.

	State or Territory								
Vaccine	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,065	22,272	848	12,347	4,730	1,661	15,770	6,311	65,004
Diphtheria, Tetanus, Pertussis (%)	90.0	86.5	86.9	90.5	89.0	89.3	89.1	87.3	88.3
Poliomyelitis (%)	90.0	86.6	86.9	90.5	89.0	89.3	89.1	87.3	88.3
Haemophilus influenzae type b (%)	90.2	85.7	88.9	90.6	88.6	88.7	88.6	86.9	87.9
Fully immunised (%)	89.8	84.7	83.8	89.9	88.0	88.2	88.0	85.9	87.0
Change in fully immunised since last quarter (%)	+0.8	+0.5	+0.9	+1.5	-1.0	+1.2	+0.3	-0.3	+0.5

Table 9. Proportion of children immunised at 2 years of age, preliminary results by disease and State for the birth cohort 1 July to 30 September 1997; assessment date 31 December 1999[1]

	State or Territory								
Vaccine	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Total number of children	1,073	22,876	924	12,688	4,778	1,605	15,840	6,516	66,300
Diphtheria, Tetanus, Pertussis (%)	87.2	81.4	75.9	84.9	84.6	82.1	83.5	81.2	82.8
Poliomyelitis (%)	87.2	81.4	75.9	84.9	84.6	82.1	83.6	81.2	82.8
Haemophilus influenzae type b (%)	86.8	80.5	81.2	85.3	83.9	80.4	83.2	80.9	82.4
Measles, Mumps, Rubella (%)	91.1	87.2	86.3	90.2	91.0	88.8	90.5	87.5	89.0
Fully immunised (%)[2]	82.9	71.0	69.6	79.4	77.8	74.0	76.8	73.0	74.9
Change in fully immunised since last quarter (%)	-0.9	-1.2	+2.5	-1.7	+1.0	-3.1	-0.5	-0.4	-1.0

1. The 12 months age data for this cohort was published in *CDI* 1999;22:36.
2. These data relating to 2 year old children should be considered as preliminary. The proportions shown as "fully immunised" appear low when compared with the proportions for individual vaccines. This is at least partly due to poor identification of children on immunisation encounter forms.

Acknowledgment: These figures were provided by the Health Insurance Commission (HIC), to specifications provided by the Commonwealth Department of Health and Aged Care. For further information on these figures or data on the Australian Childhood Immunisation Register please contact the Immunisation Section of the HIC: Telephone 02 6124 6607.

Bulletin Board

The First Pacific Rim Biomedical Seminar
Transportation of Infectious and Diagnostic Substances
3 March 2000
Sheraton on the Park
Sydney, NSW
Contact: Christine Sherwood
Phone: 1800 023 560; or
Sydney: 02 9693 2988
Email: sherwood@worldcourier.com.au

International Society of Travel Medicine/WHO/CDC
2nd European Conference of Travel Medicine
29-31 March 2000
Venice, Italy
Contact: Dr Walter Pasini, Italy
Phone: 390-541-24301
Fax: 390-541-25748
Email: wpasini@rimini.com

Meningococcal disease workshop
Meningococcal disease in Australia
Surveillance and vaccine policy - 2000 and beyond
14-15 April 2000
The New Children's Hospital
Westmead, New South Wales
Contact: Kate Wyllie
Fax: 02 9845 3082
Email: katew2@nch.edu.au

Australian Society for Infectious Diseases Meeting
16-19 April 2000
Fairmont Resort Leura
Organisers: Dart Associates:
Phone: 02 94189396
For scientific content: Contact Tom Gottlieb,
Concord Hospital
Phone: 02 9767 7533
Fax: 02 9767 7868 or
Email: Tom@micr.crg.cs.nsw.gov.au

Australian Infection Control Association
First Biennial Conference
Infection Control Beyond 2000
3-5 May 2000
Hilton Adelaide International, South Australia
Contact: AICA 2000 Secretariat
PO Box 1280 , Milton, Queensland 4064
Phone: 07 3369 0477
Fax: 07 3369 1512
Email: aica2000@im.com.au
Website: http://www.aica.org.au/aica2000.htm

Australian School of Environmental Studies
Arbovirus Research in Australia
3-7 July 2000
Couran Cove Nature Resort, Gold Coast, Queensland
Contact Dr Michael Brown
Queensland Institute of Medical Research
PO Box Royal Brisbane Hospital
Herston, Queensland, 4029
Website: http://www.mcaa.org.au

Royal North Shore Hospital
Outpatient Parenteral Therapy - beyond 2000
17-22 September 2000
Fairmont Resort
Leura, New South Wales
Phone: 02 9956 8333
Fax: 02 9956 5154
Email: confact@conferenceaction.com.au

The Australasian Society for HIV Medicine
12th Annual Conference
16-19 November 2000
The Carlton Crest, Melbourne, Victoria
Phone: 02 9382 1656
Fax: 02 9382 3699
Email: B.Pearlman@unsw.edu.au

The CDI Bulletin Board is provided as a service to readers. Every effort has been made to provide accurate information, but readers are advised to contact the relevant organisation for confirmation of details. Information about the availability of resources is included when space allows. Inclusion of a resource on the Bulletin Board does not imply endorsement of the resource by either the Communicable Diseases Network Australia New Zealand or the Commonwealth Department of Health and Aged Care.

Contributions to the Bulletin Board are invited from those organisations with forthcoming events relevant to communicable disease control.

Overseas briefs

Source: World Health Organization (WHO)
This material has been condensed from information on the WHO Internet site. A link to this site can be found under 'Other Australian and international communicable diseases sites' on the CDI homepage.

Dysentery

Sierra Leone

Reports from 6 December 1999 to 16 January 2000 provided by the Ministry of Health gave a total of 3,094 cases of shigellosis with 132 deaths (CFR 4.27). The WHO mission, working in collaboration with other agencies has reported that the outbreak has spread to many areas of the country. Further investigation and management strategies are being implemented.

Lesotho

On 12 January 2000, the Minister of Health announced an outbreak of diarrhoea in Mohale's Hoek district in the southern area of the country. The number of cases has risen beyond the expected seasonal figures from November 1999 to January 2000. As of 15 January 2000 a total of 1,862 cases with 28 deaths had been reported and adults were more affected than children. Problems identified were lack of protection of latrines and inadequate water supplies and unprotected water. Control measures were initiated and currently the number of cases appears to be decreasing. The Ministry of Health has sufficient medical supplies to deal with this outbreak.

Yellow fever in Brazil

Since the beginning of the year, 61 suspected cases of yellow fever have been reported. Five have been laboratory confirmed, 8 discarded and for 48 the lab results are pending. Active surveillance is in place throughout the country. All 5 confirmed cases (2 fatal) represent sylvatic transmission of yellow fever virus. Immunisation programs and vector control measures are being carried out. Adequate supplies of yellow fever vaccine are available in Brazil.

Imported case of Lassa fever in Germany - Update

The 23 year old student who contracted Lassa fever while in Africa in November died on 15 January 2000 in Germany. No secondary cases have been reported.

Polio in China

The WHO Polio Eradication Programme has reported a case of polio which was first reported in Qinghai Province, on 13 October 1999. The 16 month old case had onset of paralysis on 12 October 1999, after a day of fever on 11 October. Two stool samples yielded poliovirus isolates, which were later typed and differentiated as P1 wild viruses. At the time that the second sample was taken five contacts were sampled, one of which, a four year old cousin of the infected child, was also positive for wild poliovirus. The case child was unregistered and had received zero doses of polio vaccine. Neither the case nor the direct family had contact with people outside the county in the two months prior to onset. No evidence of wide-scale circulation of wild poliovirus has yet been found. Initial sequencing information on the wild poliovirus shows a close similarity to viruses recently circulating in India. The virus is significantly different from those that have been circulating in China up to the last case in 1994. Initial case response immunisation has been carried out and extensive additional activities are planned.

Cholera in Madagascar

By the end of November 1999, 6,983 cases of cholera, with 433 deaths were recorded with the majority occurring in Mahajanga Province. In January 2000, cholera was reported from a fourth province, Toliary, where the first case was confirmed on 11 January. The rainy season started in early December, and 3,176 cases with 121 deaths have been recorded in Madagascar since then up to 10 January. The Ministry of Health is continuing to take appropriate control measures.

Subscriptions

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Website

http://www.health.gov.au/pubhlth/cdi/cdihtml.htm

Contributions

Contributions covering any aspects of communicable diseases are invited. All contributions are subject to the normal refereeing process. **Instructions to authors can be found in *CDI* 2000;24:5.**

Contacts other than subscriptions

CDI is produced every four weeks by the National Centre for Disease Control, Department of Health and Aged Care, GPO Box 9848, Canberra, ACT, 2601; Fax: (02) 6289 7791, Phone: (02) 6289 8245; email: cdi.editor@health.gov.au.

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