

TRENDS

In the 12 months to May 1997, almost 1,800 cases of **pertussis** were notified in NSW, including the deaths of four small babies (Figure 5). Pertussis is highly preventable through immunisation, yet immunisation rates in NSW remain too low – the 1995 Australian Bureau of Statistics household survey found that 38 per cent of children under 7 years of age were not fully immunised against pertussis. Pertussis rates for the period June 1996 to May 1997, by Health Area, are shown in Figure 6.

So far this year, there have been two cases of **tetanus**; the two patients were not up to date with their immunisations. The first case, a Sydney woman in her 70s, was notified in January and reported having been scratched by a duck 10 days before admission. The second case, a Hunter Area woman in her 40s, was notified in May, and reported having scratched her leg two weeks before admission to hospital. These two highly preventable cases highlight the importance of doctors routinely (and opportunistically) checking and immunising all adults against tetanus and diphtheria each 10 years.

Reports of **arbovirus** infections remained elevated in May and June. Summer rains around the more populous part of the coast of NSW helped make 1997 a record year for these infections, with 1,590 cases reported to the end of June.

Measles reports also have risen (Figure 5), particularly in the Western sector of Sydney (Table 6).

CRYPTOSPORIDIUM AND SYDNEY WATER

In early July, Sydney Water Corporation reported that it had detected small numbers of *Cryptosporidium* oocysts in treated water late in June and early in July.

Cryptosporidium infection causes an illness lasting several days characterised by 8 to 10 episodes of watery diarrhoea per day, abdominal cramps, fever and vomiting. In people who are immunosuppressed, such as those living with AIDS, infection can last for many months. In response to the water findings, the NSW Health Department and the Public Health Network launched intensive surveillance for diarrhoeal disease and cryptosporidiosis through laboratories, emergency departments, general practitioners and pharmacies throughout Sydney. No evidence of disease attributable to *Cryptosporidium* in drinking water was detected. However, because the HIV-affected community and other sectors of the public have expressed interest in such findings in the past, Sydney Water Corporation released testing details on 17 July.

INFLUENZA SURVEILLANCE

There has been a sharp increase in laboratory isolates of influenza A in July (Figure 7). Between 1 July and 27 July, sentinel laboratories reported 95 diagnoses of influenza A infections and 33 of influenza B infections.

Reports of influenza-like illness from the NSW Sentinel GP Surveillance Scheme are received from five PHUs. Participating GPs report similar rates of influenza-like illness among their patients as previous years (2 per cent), although there was a slight increase in late June (Figure 8).

TRANSMISSION OF HIV POSSIBLY ASSOCIATED WITH EXPOSURE OF MUCOUS MEMBRANE TO CONTAMINATED BLOOD – UNITED STATES

In February 1996 transmission of human immunodeficiency virus (HIV) by an unknown route involving an HIV-infected man and his previously uninfected female partner was reported to the United States Centers for Disease Control and Prevention (CDC). This report summarises the epidemiologic investigation of this incident, which suggests the woman was infected through the exposure of mucous membranes to contaminated blood.

In 1992 the HIV-infected man and his uninfected female partner were enrolled in a study in which couples with one HIV-infected partner and one non-HIV-infected partner were extensively counselled, administered questionnaires, and tested periodically for HIV infection. Blood drawn from the woman on 19 July, 1994 was HIV-negative by both enzyme immunoassay (EIA) and polymerase chain reaction (PCR). However, serum specimens obtained from the woman on 24 July, 1995 and 11 September, 1995 were positive by both EIA and immunofluorescent assay.

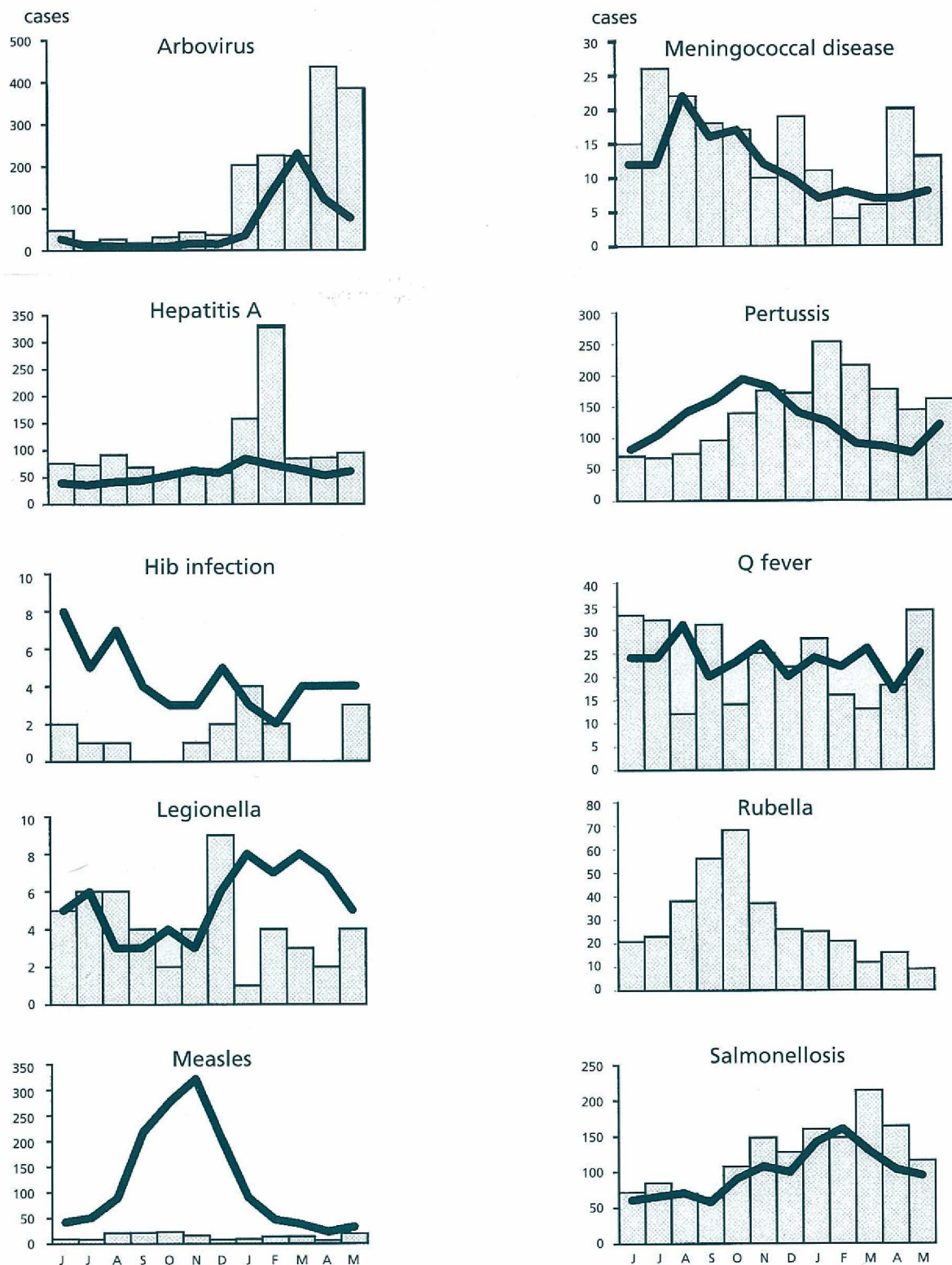
During the interval from the month before her last HIV-negative test (June 1994) to the month of her first HIV-positive test (July 1995), the woman denied known risk exposures for HIV (other sexual partners; non-injecting or injecting drug use; sexually transmitted diseases; blood transfusion; artificial insemination; occupational exposure to HIV; and acupuncture, tattoos, body piercing or other percutaneous injections). The sources of information obtained separately from each partner by two independent interviewers during this investigation and by interview records obtained during the study before the couple was aware of the HIV transmission were consistent regarding the couple's sexual practices between June 1994 and July 1995. During this period, the woman and her partner reported having vaginal intercourse an average of six times a month but never during menstrual periods. They reported always using latex condoms (for men) during sex, most times with the spermicide nonoxonyl-9. The couple denied having had anal intercourse during this period. Although they reported a condom breakage that occurred in January 1994, both independently denied awareness of condom breakage or slippage between June 1994 and July 1995 and believed the condom remained in place each time while the penis was withdrawn.

The couple engaged in "deep kissing" (open-mouth to open-mouth) several times a month. The man indicated that his gums frequently bled after he brushed and flossed his teeth and that the couple generally engaged in sexual intercourse and "deep kissing" at night after he brushed his teeth. Occasional instances of oral intercourse between the couple reportedly did not involve the exchange of semen or blood. In addition, the woman recalled using the man's toothbrush and razor, both without visible blood, on one occasion each.

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FIGURE 5

REPORTS OF SELECTED INFECTIOUS DISEASES, NSW, 12 MONTHS TO MAY 1997, BY MONTH OF ONSET (WITH HISTORICAL COMPARISON)



Because of data collation problems, historical rubella figures are unavailable.

■ June 96 - May 97 / — Mean June 93 - May 96

FIGURE 6

PERTUSSIS RATES, NSW, JUNE 1996 – MAY 1997

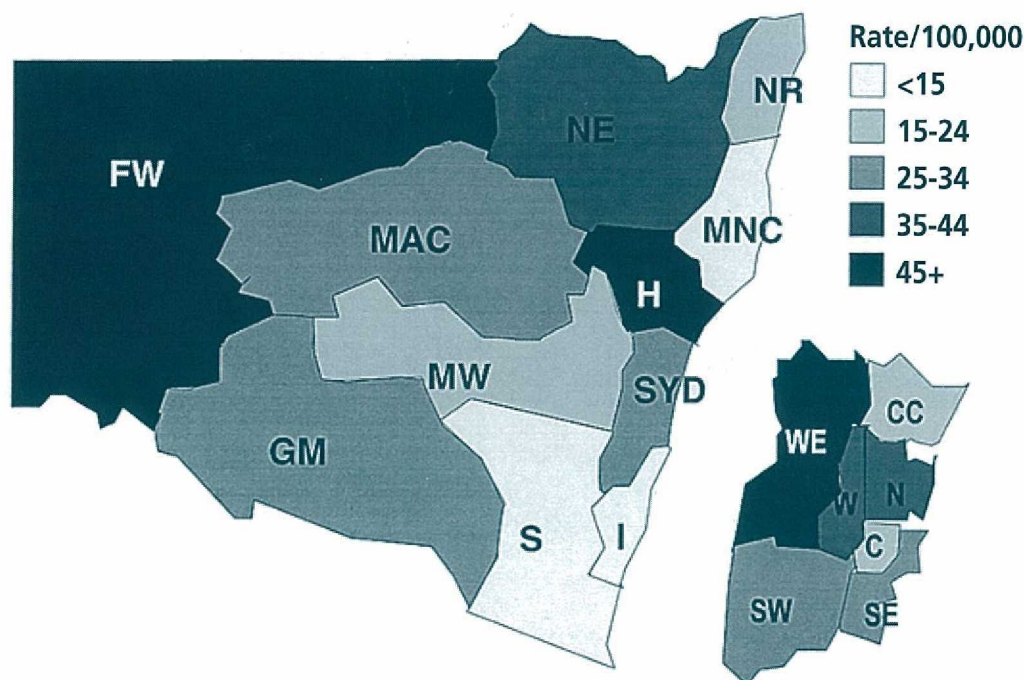


FIGURE 7

Influenza diagnoses by sentinel NSW laboratories, 1 January to 30 July 1997, by diagnostic method

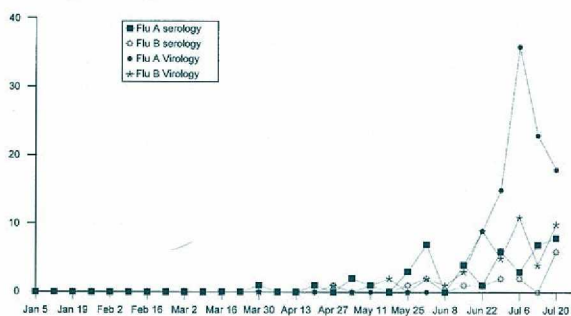


FIGURE 8

Proportion of consultations for influenza-like illness by NSW sentinel general practitioners, 1 January to 27 July 1997 (columns), by week, with historical comparison (line)



Infectious diseases – July 1997

► Continued from page 55

She was unable to specify whether these events occurred during the putative infection period of June 1994 to July 1995.

The man had been infected with HIV since 1988 as the result of injecting drug use. He reported longstanding poor dentition and occasional sores in his mouth. On 29 August, 1994 he had a normal platelet count and a CD4+ T-lymphocyte count of 110 cells/mL. On September 6, 1994 he sought medical care at a clinic because of a cough, stress and intermittent weight loss. At this time small vesicles were noted in his throat. At a follow-up visit in April 1995 canker sores, halitosis and gingivitis were noted. In May 1995, at his first dental visit since 1988, gingivitis and oral hairy leukoplakia were diagnosed. He had never received antiretroviral medication.

On 8 August, 1994 the woman underwent a dental evaluation followed by root canal therapy. Her dental records noted poor condition of gums, 2mm to 6mm pockets (indicating periodontitis), poor personal dental hygiene practices and a recommendation for periodontal therapy. No complications or excessive bleeding from the endodontic therapy were reported by the woman or noted by the dentist. The dentist was tested for HIV in May 1996 and was negative by EIA.

On 26 August, 1994 the woman experienced the onset of a syndrome that lasted 7-10 days and was characterised by fever of 39°C, headache, swollen lymph nodes, sore neck and back and muscle aches in her legs. On 2 September she sought medical care from her primary-care physician, who noted erythema and inflammation of the gingiva.

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The physician diagnosed a viral process with concomitant gum infection and prescribed erythromycin for treatment. The woman reported no other clinically important illness from June 1994 to July 1995.

Blood samples were obtained from both HIV-infected partners in April 1996. PCR techniques and sequencing indicated a high degree of relatedness between the viruses infecting the man and woman, supporting the conclusion that HIV was transmitted from one to the other. Testing of stored samples obtained from each partner in 1995 produced similar results.

Comment

This report suggests that the woman probably became infected with HIV between June 1994 and July 1995, as these symptoms were consistent with acute retroviral syndrome¹. In addition, during June 1994 and July 1995, the man's CD4+ T-lymphocyte count was low, which may be associated with increased infectivity and risk for transmission².

Results of the DNA sequencing and phylogenetic analysis support the epidemiologic findings that the woman's infection was acquired from her infected male partner. Although the exact route of transmission in this report cannot be determined, the most likely possibility is that the woman became infected through mucous membrane exposure to the man's saliva that was contaminated by blood from his bleeding gums or exudate from undetected oral lesions. Such exposure may have occurred during "deep kissing". The woman's inflamed gingival mucosa, as indicated by her dental and medical records, might have been a contributing factor.

Exposure to saliva uncontaminated with blood is considered to be a rare mode of HIV transmission for at least five reasons:

- 1) saliva inhibits HIV-1 infectivity³
- 2) HIV is infrequently isolated from saliva⁴
- 3) none of the approximately 500,000 cases of AIDS reported to CDC has been attributed to exposure to saliva
- 4) levels of HIV are low in the saliva of HIV-infected persons, even in the presence of periodontal disease⁵
- 5) transmission of HIV in association with kissing has not been documented in studies of non-sexual household contacts of HIV-infected people⁶. However, rare bite-related instances of HIV transmission from exposure to saliva contaminated with HIV-infected blood have been reported^{7,8}.

Other exposures of the woman to the man's blood or semen cannot be excluded. Although occasional instances of oral sex did not reportedly involve the exchange of semen or blood between the people in this report, these routes of transmission cannot definitively be excluded. Sexual exposure through vaginal intercourse is a plausible mechanism of transmission for the case described in this report; however, other studies of couples in which one partner is HIV-infected and the other is not indicate that HIV transmission is rare when heterosexual couples use condoms consistently during vaginal intercourse⁹. If a condom is not used correctly, it may slip off or break, thereby reducing its effectiveness as a barrier to HIV. However, both partners could not recall any instances of condom slippage or breakage during the time infection was likely to have occurred. In addition, although the shared use of a toothbrush or razor are theoretically plausible routes of transmission, the woman recalled that each event occurred only once, and she could not specify whether either event occurred during the period when transmission was most likely to have occurred.

The findings of this investigation underscore the multiple routes by which exposure to infectious body fluids can occur among sexually intimate people. Uninfected people considering intimate relationships with people known to be infected with HIV should be educated about the rare possibility of HIV transmission through mucous membrane exposures. People choosing to have sex with HIV-infected people or people with unknown HIV serostatus should correctly use latex condoms (for men) during each act of intercourse and should avoid any other exposure to potentially infectious body fluids, including blood, semen, or any other body fluid visibly contaminated with blood.

Adapted from: CDC. Transmission of HIV possibly associated with exposure of mucous membrane to contaminated blood. *MMWR* 1997; 46:620-624

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TABLE 6

INFECTIOUS DISEASE NOTIFICATIONS FOR NSW RECEIVED IN JUNE 1997 BY AREA HEALTH SERVICES

Condition	Area Health Service																	Period	
	CSA	NSA	WSA	WEN	SWS	CCA	HUN	ILL	SES	NRA	MNC	NEA	MAC	MWA	FWA	GMA	SA	Total for Jun**	Total to date**
Blood-borne and sexually transmitted																			
AIDS	1	1	-	-	-	1	-	-	3	1	-	-	-	-	-	-	1	8	158
HIV infection*	-	-	-	-	-	-	Reported bimonthly		-	-	-	-	-	-	-	-	-	3	170
Hepatitis B - acute viral*	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	3	30
Hepatitis B - other*	64	39	43	2	69	1	7	10	43	1	-	1	3	2	2	2	1	290	2,027
Hepatitis C - acute viral*	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	6
Hepatitis C - other*	67	48	100	20	83	26	43	29	83	42	21	8	8	19	1	16	25	640	4,382
Hepatitis D - unspecified*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Hepatitis E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Hepatitis, acute viral (NOS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonorrhoea*	16	7	5	3	3	1	4	2	46	1	3	1	5	-	-	-	-	92	309
Syphilis	8	1	7	-	5	1	2	-	9	3	1	5	4	1	3	-	-	50	311
Vector-borne																			
Arboviral infection*	4	16	9	24	7	48	43	25	6	13	19	4	7	2	4	9	5	245	1,590
Malaria*	1	3	2	1	1	-	2	1	2	1	-	1	-	-	-	-	-	15	92
Zoonoses																			
Brucellosis*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Leptospirosis*	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	2	16
Q fever*	-	-	-	-	-	-	-	1	-	2	3	8	7	5	2	2	1	31	142
Respiratory/other																			
Legionnaires' disease	2	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	7	25
Meningococcal (invasive) infection	2	1	2	3	1	1	-	1	-	-	1	2	-	-	-	-	-	14	67
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mycobacterial tuberculosis	6	2	7	-	5	-	5	3	4	-	-	-	-	1	-	1	-	34	184
Mycobacteria other than TB	10	3	2	1	2	2	2	-	6	5	-	-	1	-	-	-	-	34	197
Vaccine-preventable																			
Adverse event after immunisation	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	23
<i>H. influenzae</i> B (invasive) infection	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	10
Measles	3	-	5	1	-	1	1	1	1	-	-	-	-	-	-	2	-	15	76
Mumps*	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	20
Pertussis	17	16	15	10	15	2	69	2	25	6	4	2	4	4	1	9	-	201	1,170
Rubella*	-	-	-	-	-	-	4	-	-	-	-	2	-	-	-	-	-	6	87
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Faecal-oral																			
Cholera*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Foodborne illness (NOS)	5	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	7	56
Gastroenteritis (instit)	-	-	-	29	-	-	1	-	-	-	-	-	-	-	-	-	-	30	295
Hepatitis A	12	12	8	5	4	3	5	4	42	14	8	11	12	4	4	2	-	150	889
Listeriosis*	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	11
Salmonellosis (NOS)*	8	12	6	2	16	6	7	-	8	11	7	2	-	-	3	3	2	93	922
Typhoid and paratyphoid*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14

* lab-confirmed cases only

** includes cases with unknown postcode

PUBLIC HEALTH EDITORIAL STAFF

The editor of the *NSW Public Health Bulletin* is Dr Michael Frommer, Director, Centre for Research and Development, NSW Health Department. Dr Lynne Madden is production manager.

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Abbreviations used in this Bulletin:

CSA Central Sydney Health Area, SES South Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NRA Northern Rivers Health Area, MNC Mid North Coast Health Area, NEA New England Health Area, MAC Macquarie Health Area, MWA Mid West Health Area, FWA Far West Health Area, GMA Greater Murray Health Area, SA Southern Health Area, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.