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From the Director's desk

This is the first issue of *Disease WAtch* under my Directorship of the Communicable Disease Control Directorate (CDCD). I took up this position in October 2009, having been with the NSW Department of Health working in the fields of communicable disease control and public health emergency preparedness.

With key personnel changes in the CDCD and a high level of devotion of resources to the pandemic (H1N1) influenza response, *Disease WAtch* has not been produced since early in 2009. With this period now largely behind us; this year I am glad to see the resumption of this publication. We aim to produce *Disease WAtch* bi-monthly throughout 2010.

In this issue, we have two articles on the first influenza pandemic of the 21st century. The first is an epidemiological overview of the pandemic in Western Australia, and the second is a descriptive article on the pandemic (H1N1) influenza vaccination program currently underway. In addition, two on-line training initiatives are described, one a hepatitis C e-learning program for GPs and nurses, and the other a training package for contact tracing for sexually transmitted infections. There is also news of the evaluation and update to the *WA Guidelines for Managing Sexually Transmitted Infections* (the 'Silver Book') and an analysis of notifiable diseases in WA for 2008, including tables showing notification data for all notifiable diseases.

I hope you find this issue of *Disease WAtch* informative and I look forward to bringing you regular issues of the publication throughout 2010.

Dr. Paul Armstrong
Director

Pandemic (H1N1) 2009 Influenza in Western Australia

In April 2009, a novel influenza A virus, pandemic influenza A (H1N1) 2009 (pH1N1), was identified in the United States and Mexico. The virus was a quadruple reassortment of two swine strains, one human strain, and one avian strain of influenza. This virus is highly transmissible between humans and has spread rapidly around the world. In the great majority of cases, pH1N1 causes mild disease, however, it can be severe, particularly in those with predisposing medical conditions.

On 9 May 2009, the first Australian case was reported in Queensland. Three weeks later, on 24 May 2009, the first West Australian case was notified in a traveller returning from Canada and the US. Figure 1 shows that the number of notifications in WA increased slowly throughout the month of June, remaining mostly below 20 cases daily. Thereafter, cases increased sharply, peaking by the third week of July, with over 140 cases notified in one day. The number of notified cases declined steadily from mid-August and by the end of September an average of two cases daily was being reported. Over 90% of all laboratory-confirmed influenza cases during the winter period were the pH1N1 strain.

To the end of September, a total of 4516 cases with a median age of 24 years were notified in WA. Of these, 859 (19%) were hospitalised and there were 27 deaths (case fatality ratio: 0.6% amongst all laboratory confirmed cases). Females just outnumbered males (ratio =1.1). Among the females, 88 cases (4% of females) reported being pregnant.

Age Group

pH1N1 notification rates were highest among those aged 5 to 19 years (325/100,000 population) followed by those aged 20 to 29 years (308/100,000) and 0 to 4 years (293/100,000) (see Table 2). In contrast, the notification rate among adults over 65 years was substantially lower (40/100,000).

Aboriginal People

Overall, notification rates were four times higher among Aboriginal people compared to

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non-Aboriginal people (Table 1). The greatest rate disparity was between the adults over 65 years old, where Aboriginal people were 14 times more likely to be notified.

In total, 19% of hospitalised cases were Aboriginal people with Aboriginal people seven times more likely than non-Aboriginal people to be hospitalised for pH1N1 (220/100,00 vs 32/100,000).

Table 1. Number, proportion and age-specific rates of pandemic (H1N1) influenza cases by Aboriginality and age group, WA, May to 30 September 2009.

Age Group	Aboriginal			Non-Aboriginal			
	n	%	rate*	n	%	rate*	Rate Ratio
0-4y	71	12.8	860.5	324	8.6	247.5	3.5
5-19y	190	34.2	738.6	1178	31.1	286.8	2.6
20-29y	91	16.4	738.9	815	21.5	273.1	2.7
30-39y	76	13.7	740.6	519	13.7	172.9	4.3
40-49y	65	11.7	772.9	427	11.3	137.0	5.6
50-64y	52	9.4	773.6	425	11.2	108.3	7.1
65+y	11	2.0	499.5	95	2.5	36.1	13.8
Total	556	100	752.5	3783	100	179.5	4.2

* Rates are per 100, 000 population

Note: 179 cases with unknown Aboriginal status were excluded

Regions

Notification rates were similar across the State with between 150 to 200 cases per 100,000 population, with the exception of the Kimberley and Pilbara regions where rates were 607 and 439 per 100,000 population, respectively. This may represent, at least in part, increased testing in Aboriginal communities.

Hospitalisations

There were 859 hospitalised cases with a median age of 33 years (Table 2). Of these, 78 (9%) cases, with a median age of 41 years, were admitted to intensive care units. Hospitalisation rates were highest in children aged 0 to 4 years, and lowest in adults over 65 years, reflecting lower clinical attack rates in older people. However, although the over 65 year old age group had the lowest number of notifications (n=107), a high proportion of these cases (n=57, 54%) resulted in a hospital admission. Similarly, around one-third of notifed cases in children aged 0 – 4 years and adults aged 50 – 64 years were hospitalised.

Symptoms

Additional information on symptoms and predisposing medical conditions was sought for a subset of notified pH1N1 cases including all those who were hospitalised. This information was available for 1524 pH1N1 cases. The most common symptoms were fever (87%), cough (83%) and fatigue (72%); other frequent findings included myalgia (58%), headache (54%), sore throat (52%), rhinorrhoea (50%) and shortness of breath (47%). A smaller proportion of cases reported vomiting and diarrhoea (35% and 20% respectively).

Table 2. Number, proportion and age-specific rates of pandemic (H1N1) influenza cases, hospitalisations and deaths by age group, WA, May to 30 September 2009.

Age Group	Notifications			Hospitalisations			Deaths	
	n	%	rate*	n	% hospitalised	rate*	n	Case fatality ratio†
0-4y	407	9.0	292.5	118	29.0	84.8	1	0.2
5-19y	1417	31.4	324.7	152	10.7	34.8	1	0.1
20-29y	956	21.2	307.7	121	12.7	38.9	4	0.4
30-39y	624	13.8	201.0	119	19.1	38.3	3	0.5
40-49y	511	11.3	159.7	116	22.7	36.2	5	1.0
50-64y	494	10.9	123.8	176	35.6	44.1	6	1.2
65+y	107	2.4	40.4	57	53.3	21.5	7	6.5
Total	4516	100	207.1	859		39.4	27	0.6
Median age	24 y			33y			48y	

* Rates are per 100, 000 population

† Case fatality ratio is the number of pH1N1-associated deaths as a proportion of laboratory confirmed cases

Predisposing medical conditions

Of 859 hospitalised patients with pH1N1, the most common predisposing medical condition was chronic lung/respiratory disease including asthma (32%), followed by smoking (15%), cardiac disease (11%), diabetes and obesity (each 10%), and immunocompromising conditions (8%). Between 3% to 5% of admitted patients each reported either renal, neurological, metabolic or blood disorders.

Mortality

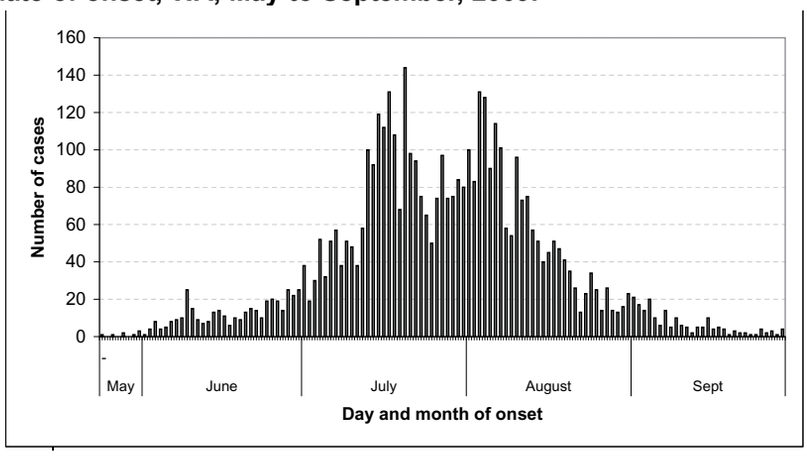
There were 27 pH1N1 deaths (23 Non-Aboriginal and 4 non-Aboriginal) corresponding to an overall case fatality ratio amongst all laboratory confirmed cases of 0.6%. Of the deaths, 74% had a documented risk factor; no deaths were reported in pregnant women. The median age was 48 years (age range: 4 to 92 years); two deaths were in children (four and 12 years old) and the remainder were mostly over 40 years old. The case-fatality ratio was highest in adults over 65 years old (6.5%).

Current situation

As of early November, pH1N1 activity in WA and the rest of Australia is at "seasonal" baseline levels. Meanwhile, epidemic activity is high in Northern Hemisphere countries. It is important that we use this opportunity to promote widespread vaccination against pH1N1, especially in vulnerable groups.

See overleaf for Figure 1.

Figure 1. Epidemic curve of pandemic (H1N1) influenza cases by date of onset, WA, May to September, 2009.



Influenza Pandemic H1N1 09 Vaccine Roll-out in WA

Introduction

The national response to an influenza pandemic is articulated in the *Australian Health Management Plan for Pandemic Influenza (2008) (AHMPPI)*. The overarching goal of the response is to contain the spread of the disease (DELAY, CONTAIN, and SUSTAIN phases) until such time as a vaccine can be developed and rolled out (CONTROL phase).

In late April 2009, the WHO declared outbreaks of the novel pandemic (H1N1) 2009 virus infection a 'health emergency of international significance'. On 11 June 2009, the WHO raised its level of pandemic alert to level 6, the highest level, thus declaring the first influenza pandemic of the 21st century.

An early response initiative by the Australian Government was to bring into play the contractual agreements it had in place with leading vaccine manufacturers to produce vaccine in quantities large enough to vaccinate the population. The first deliveries of the vaccine by states and territories to vaccine providers were on 28 September 2009.

The PROTECT phase was a new Australian phase that was developed during the pandemic response. This phase encapsulated the vaccine roll-out and is still in place today. It was developed in recognition of the relatively mild nature of the pandemic and it focuses on protecting vulnerable groups who are more likely to have severe disease (those with chronic medical conditions, very obese people, pregnant women and aboriginal people) and those at increased risk of being exposed to the virus (primarily health care workers).

Due to the long lead time to develop a new influenza vaccine, the first wave of the epidemic had subsided by the time the vaccine became available. Because of fears of a second wave occurring out of season in the warmer months, it was decided to roll-out the vaccine program in spring 2009 in an effort to protect the community by aiming to achieve 'herd immunity' as quickly as possible.

Pandemic (H1N1) 2009 Influenza Vaccine Roll-out in WA

A working party was established to plan the implementation stage of the vaccination program. It included representatives from the Communicable Disease Control Directorate, Area Health Services, Disaster Preparedness Management Directorate, Office of Aboriginal Health, Community and Adolescence Health Service, Divisions of GP, the Royal Australasian College of GPs, and government and non-government organisations.

This roll-out of the pandemic (H1N1) 2009 influenza (Panvax) is a two-stage process. In the first stage, the vaccine was made available to all people ten years and older, however, a particular focus was on health care workers, people with chronic diseases, pregnant women, and indigenous people. The second stage of the vaccine roll-out is planned to occur in December 2009 and will target all children from 6 months to nine years.

In stage one of the program, vaccine delivery occurred via three methods: in publicly-run mass vaccination clinics, via GPs, and in health care facilities. The WA Department of Health set up a total of eight mass vaccination clinics in metropolitan areas to minimise the initial surge in demand on GPs, and these were placed in areas were there was low GP coverage. A range of vaccination clinics were also established throughout regional areas. Vaccines provided to hospitals were used to vaccinate health care workers as well as for opportunistic vaccination of patients through hospital inpatient and

outpatient services.

Along with the vaccine itself, the Commonwealth Government provided 'VacPacks' containing syringes, needles and other equipment to administer the vaccine. A web-based ordering system was set up for GPs to order vaccine and VacPacks via the internet.

GPs were asked to fax to CDCD a list of the names of people who received the Panvax vaccine, and whether they belonged to vulnerable groups. This enabled CDCD to compile a register of people vaccinated and an estimate of vaccine uptake in those people in the various priority groups.

The program commenced on 30 September 2009 and over 20,000 people were vaccinated in the first two and half weeks. On average, one hundred deliveries of vaccine were distributed each day during the first two weeks of the program. As of 3 December 2009, more than 140 000 doses of vaccine have been administered through a combination of public mass vaccination clinics, GPs, and hospital services.

Logistics

Planning for the roll-out of the program was challenging in its early stages due to the unknown public demand for the vaccine. There were initial delays in the distribution of vaccine due to the very large number of deliveries required in the first few days of vaccine release.

Consent forms

Prior to the vaccine becoming registered, GPs were advised that a consent form had to be completed by all patients receiving the vaccine. However, the vaccine was registered by the TGA a few days prior to its release, which meant that GPs then had the choice of using the Commonwealth consent form or adopt their usual consent processes.

Multi-dose Vials

Many GPs have raised concern about the multi-dose vials and the potential wastage if sufficient people were not available to receive the vaccine in a surgery on a given day. GPs were encouraged to run designated vaccination clinics to minimise wastage. However, the Commonwealth Government accepted that some wastage was inevitable.

VacPacks

Another concern raised during the vaccination program related to the type of syringes provided in the VacPacks. It was observed by immunisation providers that information about the manufacturing details of the syringes provided in the VacPacks was limited, including whether or not the syringes contained latex or any other property/substance that had the potential to cause allergic reactions. Following an adverse event to the vaccine in WA, the WA Department of Health promptly issued additional latex-free syringes to GPs to use while the Commonwealth Government reassessed the manufacturing components of the syringes used in the VacPacks. The recommendation from this assessment was that individuals should be assessed for latex and other allergies prior to vaccination and that if the patient had no known allergy, the VacPack syringes can be used. This information has been relayed in a letter to all WA GPs.

Panvax Formulation for Children

The next stage of the Panvax program is the roll-out of the Panvax vaccine for children less than 10 years of age. The Therapeutic Goods Administration (TGA) registered the vaccine for use in children on 3 December 2009. For children aged from 6 months to 35 months, a 2.5 mL pre-filled syringe formulation called 'Panvax Junior' can be used. For children from 4 to 9 years, the multi-dose vials used in the first stage of the roll-out will be used. Both groups (6 months to 35 months and 3 years to 9 years) require two doses separated by at least 28 days. Vaccine providers will need to put in place processes to ensure the child receives his or her second dose.

It needs to be remembered that children under 2 years had the highest rate of hospitalisation of any age group during the first wave of the pandemic, and therefore stand to derive considerable benefit from the vaccine. Vaccine providers should be aware that the packaging for the Panvax Junior and the seasonal influenza vaccine for 2010 have the same colour.

Concluding comments

There is still a risk of resurgence of the pandemic virus in the summer and autumn months and GPs are encouraged to continue to be proactive and promote Panvax to their patients, particularly those who are more vulnerable to severe illness.

It should be noted that the trivalent seasonal influenza vaccine, expected to be released in March 2010, will also contain the H1N1 pandemic influenza strain, along with an H3N2 influenza A strain and an influenza B strain. However, unlike the current monovalent pandemic H1N1 influenza vaccine, the trivalent vaccine will not be available free of charge to people over 5 years who do belong to vulnerable groups.

Acknowledgements

We would like to take this opportunity to thank all GPs, immunisation service providers, AMS Organisations, Public Health Unit staff and Local Government Authority staff for their ongoing support in the pandemic H1N1 influenza vaccine roll-out.

Evaluation of STI Management Guidelines prompts an update

In mid-2008, the Department of Health appointed an independent evaluator to assess awareness, use of and compliance with the *WA Guidelines for Managing Sexually Transmitted Infections*.

The evaluator conducted key informant interviews, focus group discussions with GPs, Aboriginal Health Workers and registered nurses, and a state-wide online survey of health care providers (318 respondents commenced and 270 respondents completed the survey). The key findings were:

- Overall, the Guidelines are a valuable resource particularly for health care providers working in sexual health. They are very useful even when used infrequently. Most health care providers working in sexual health or with an interest in sexual health are aware of the Guidelines.
- The hard copy is preferred and is used much more frequently than the online version, as the design of both the Department's website and the online version of Guidelines make them difficult to navigate. Sixty-three percent of GPs reported having access to a hard copy of the Guidelines in their practice setting.
- Clinical practice is generally not consistent with the Guidelines in metropolitan areas of WA. Health care providers use a variety of resources to support their knowledge and assist decision making about sexual health. Issues influencing health care providers' use of the Guidelines include knowledge of the Guidelines, difficulty navigating the Guidelines, and the realities of day to day practice.
- Future editions of the Guidelines need to consider a range of audiences – online and offline versions of the Guidelines would be acceptable to health care providers if some modifications are made. The format of the hard copy could be improved.

The link to the full evaluation report is available on the Public Health website (www.public.health.wa.gov.au/3/466/3/reports_and_publications.pm)

As a result of the evaluation, the Communicable Disease Control Directorate has commissioned the Australasian Society for HIV Medicine to conduct further consultation and to develop the next edition of the guidelines and supplementary resources. For more information please contact Sue Laing (Email: susan.laing@health.wa.gov.au)

The Communicable Disease Control Directorate would like to thank all the health care providers who participated in the evaluation process by sharing their time, knowledge and expertise.

Hepatitis C Pre-and Post-test Discussion Guide for GPs

Enclosed with this edition of *Disease WAtch* is a resource for GPs to refer to when conducting hepatitis C testing. The double-sided A4 sheet provides a checklist for pre and post-test discussion for hepatitis C, and a hepatitis C testing pathway. Sources of further information for both patients and GPs are also listed.

The resource is based on the National Hepatitis C Testing Policy (see www.health.gov.au/internet/main/publishing.nsf/Content/phd-hepc-testing-policy-may07) and Edith Cowan University Hepatitis C On-line Learning: A resource for Health Professionals (http://hepc.ecu.edu.au/)

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Review of Notifiable Diseases 2008

There were 21,472 communicable disease notifications in WA in 2008, the highest number on record. The increase was partially attributed to increased notifications of varicella-zoster, Ross River virus and pertussis relative to recent years, and a continuing increase in notifications of genital chlamydia infection. There was also a backlog of notification data received from one pathology laboratory which affected the number of unspecified hepatitis B and hepatitis C cases.

The most frequently notified diseases in 2008 were genital chlamydia (8643 cases), campylobacteriosis (1833), gonorrhoea (1692) and varicella-zoster infection (1630).

Two new conditions were recently added to the list of notifiable diseases: acute rheumatic fever in November 2007, and Chikungunya virus in May 2008, following recent large outbreaks in Indian Ocean countries and South East Asia, particularly Malaysia and Thailand.

Enteric diseases

As in previous years, campylobacteriosis was the most frequently notified enteric disease in 2008, comprising 52% of enteric notifications. **Salmonellosis** and **rotavirus** infection were the 2nd and 3rd most commonly notified enteric infections, respectively.

For the majority of the enteric infections, the number of notifications in 2008 was within the expected range based on previous years. Exceptions to this were *Campylobacter*, hepatitis A and *Shigella* infections. The number of ***Campylobacter*** notifications in 2008 was slightly lower than for each of the previous four years.
The number of notifications for **hepatitis A** in 2007 and 2008 was lower than for any of the previous years on the notifications database.
This follows the introduction of a hepatitis A vaccine for Indigenous children in late 2005, with 2007 and 2008 the first full years in which the target group would have received the two doses of vaccine. In 2007 and 2008, there were no notified hepatitis A cases in Aboriginal people, and low numbers of cases from regional areas, representing a significant change from the years before the vaccine was introduced.
The number of cases of ***shigellosis*** in 2008 was higher than for the previous four years. This was largely the result of an increase in one *Shigella* type, *Shigella sonnei* biotype A. Notifications for this biotype increased from 13 in 2007 to 77 in 2008. This increase in notifications was largely associated with the Central Wheatbelt, South West and South Metropolitan areas.

Notification rates were highest in the 0 to 4 year age group for all of the major enteric infections, with the exception of hepatitis A infection, as there were no hepatitis A notifications for this age group. For most of the enteric infections, notification rates were also higher for Aboriginal as compared to non-Aboriginal people.
The greatest difference was for *Shigellosis*, with the notification rate for Aboriginal people 34 times that for non-Aboriginal people.
For most of the enteric diseases, the Kimberley region had the highest notification rates for both Aboriginal and non-Aboriginal people.

Vaccine-preventable diseases

Eight **measles** cases with a median age of 23 years (range 16 – 48 years) were notified in 2008. Four cases were acquired overseas

Continued page 10...

Notes on Tables 1 and 2

1. Data extracted from WA Notifiable Diseases Database (WANIDD) on 25 February 2009.
2. All data analysed on basis of the earliest available date reflecting date of onset of disease ("optimal date of onset" in WANIDD), with the exception of diseases marked with " * " which were analysed by date of receipt of notification.
3. Data for Methicilin Resistant ***Staphylococcus aureus*** **(**MRSA) are not shown, as these are better subject to laboratory surveillance, and a high proportion of cases are detected by screening and represent carriage rather than disease.
4. Rate = crude rate per 100,000 population. Rates were calculated using the Rates Calculator Version 9.3.1 (Department of Health, Western Australia).
5. Total cases in Table 2 includes cases with interstate or overseas residential addresses, or where no postcode was specified.
6. NN = not notifiable.

Table 1. Number of notifications in WA by year by year, 2004 to 2008 (see page 6 for notes)

Disease	Year (Population)				
	2004	2005	2006	2007	2008
	(n=1,982,637)	(n=2,017,088)	(n=2,059,381)	(n=2,106,119)	(n=2,138,491)
Enteric diseases					
Campylobacteriosis	1939	2450	1949	2101	1833
Cholera	1	1	0	0	2
Cryptosporidiosis	125	183	251	611	163
Hepatitis A	57	54	71	21	22
Hepatitis E	3	2	1	0	6
Listeriosis	9	4	13	2	8
Paratyphoid fever	13	4	1	3	3
Rotavirus	NN	NN	236	723	425
Salmonellosis	621	798	798	985	851
Shigellosis	111	155	129	104	171
Shiga/Vero-toxin producing *E.coli*	0	12	3	2	0
Typhoid fever	5	8	11	9	8
Vibrio parahaemolyticus	3	0	3	9	7
Yersiniosis	1	2	3	5	7
Vaccine preventable diseases					
H.influenzae type B	0	2	0	2	0
Influenza	187	466	213	1038	1018
Measles	9	1	30	1	8
Mumps	10	22	17	109	95
Pertussis	2095	525	269	133	462
Pneumococcal infection	196	140	134	132	161
Rubella	3	6	2	3	7
Tetanus	0	0	0	0	1
Varicella (chickenpox)	NN	NN	248	323	356
Varicella (shingles)	NN	NN	166	386	516
Varicella (unspecified)	NN	NN	198	659	758
Vector-borne diseases					
Arboviral encephalitis	0	0	3	0	1
Barmah Forest virus	72	84	186	136	177
Chikungunya virus infection	NN	NN	NN	NN	2
Dengue fever	7	19	16	54	99
Malaria	36	85	120	85	85
Ross River virus	1101	311	881	600	881
Schistosomiasis	92	403	272	358	339
Typhus (Rickettsial infection)	9	10	21	7	19
Zoonotic diseases					
Brucellosis	0	0	1	1	0
Leptospirosis	5	5	3	5	1
Psittacosis	0	4	4	3	6
Q fever	**9**	**6**	**5**	**7**	**6**
Blood-borne viral diseases					
Hepatitis B (newly acquired)	28	35	50	42	48
Hepatitis B (unspecified)*	392	376	551	578	713
Hepatitis C (newly acquired)	139	107	110	82	100
Hepatitis C (unspecified)*	1041	966	1021	1175	1279
Hepatitis D	**0**	**2**	**1**	**0**	**0**
Sexually transmissible infections					
Chancroid (soft sore)	0	1	0	0	0
Chlamydia (genital)	4332	5446	6139	7749	8643
Donovanosis	1	2	0	0	0
Gonorrhoea	1418	1576	1675	1761	1692
HIV	33	64	72	75	76
Syphilis (infectious)	50	19	50	103	179
Syphilis (non-infectious)*	157	183	140	128	108
Other diseases					
Acute rheumatic fever	NN	NN	NN	NN	6
Haemolytic uraemic syndrome	1	1	0	0	0
Creutzfeldt-Jakob disease	3	2	1	2	4
Legionellosis	50	71	92	82	72
Leprosy	0	3	3	2	1
Melioidosis	4	1	5	4	6
Meningococcal infection	40	47	21	20	24
Tuberculosis*	81	61	113	60	97
Total	**14,456**	**14,661**	**16,230**	**20,405**	**21,472**

Table 2. Number and rate of notifications in WA by region, 2008 (see page 6 for notes)

Disease	North Metropolitan (n=886,464)		South Metropolitan (n=773,965)		Wheatbelt (n=73,750)		Goldfields (n=56,216)	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Enteric diseases								
Campylobacteriosis	776	87.5	556	71.8	78	105.8	46	81.8
Cholera	1	0.1	1	0.1	0	0.0	0	0.0
Cryptosporidiosis	27	3.0	35	4.5	3	4.1	2	3.6
Hepatitis A	15	1.7	4	0.5	0	0.0	0	0.0
Hepatitis E	2	0.2	2	0.3	1	1.4	0	0.0
Listeriosis	2	0.2	3	0.4	2	2.7	0	0.0
Paratyphoid fever	1	0.1	2	0.3	0	0.0	0	0.0
Rotavirus	199	22.4	143	18.5	9	12.2	3	5.3
Salmonellosis	291	32.8	267	34.5	14	19.0	19	33.8
Shigellosis	26	2.9	43	5.6	13	17.6	6	10.7
Shiga/Vero-toxin producing *E.coli*	0	0.0	0	0.0	0	0.0	0	0.0
Typhoid fever	4	0.5	4	0.5	0	0.0	0	0.0
Vibrio parahaemolyticus	4	0.5	2	0.3	0	0.0	0	0.0
Yersiniosis	4	0.5	1	0.1	1	1.4	0	0.0
Vaccine preventable diseases								
H.influenzae type B	0	0.0	0	0.0	0	0.0	0	0.0
Influenza	445	50.2	343	44.3	42	56.9	60	106.7
Measles	5	0.6	1	0.1	0	0.0	0	0.0
Mumps	9	1.0	11	1.4	2	2.7	9	16.0
Pertussis	161	18.2	154	19.9	4	5.4	14	24.9
Pneumococcal infection	55	6.2	51	6.6	3	4.1	8	14.2
Rubella	3	0.3	3	0.4	1	1.4	0	0.0
Tetanus	1	0.1	0	0.0	0	0.0	0	0.0
Varicella (chickenpox)	242	27.3	189	24.4	26	35.3	9	16.0
Varicella (shingles)	150	16.9	124	16.0	25	33.9	8	14.2
Varicella (unspecified)	293	33.1	273	35.3	23	31.2	8	14.2
Vector-borne diseases								
Arboviral encephalitis	0	0.0	0	0.0	0	0.0	0	0.0
Barmah Forest virus	32	3.6	84	10.9	3	4.1	4	7.1
Chikungunya virus infection	1	0.1	1	0.1	0	0.0	0	0.0
Dengue fever	44	5.0	36	4.7	0	0.0	1	1.8
Malaria	37	4.2	35	4.5	1	1.4	3	5.3
Ross River virus	163	18.4	365	47.2	28	38.0	13	23.1
Schistosomiasis	189	21.3	119	15.4	1	1.4	4	7.1
Typhus (Rickettsial infection)	4	0.5	5	0.6	1	1.4	0	0.0
Zoonotic diseases								
Brucellosis	0	0.0	0	0.0	0	0.0	0	0.0
Leptospirosis	0	0.0	0	0.0	0	0.0	0	0.0
Psittacosis	3	0.3	2	0.3	0	0.0	0	0.0
Q fever	1	0.1	2	0.3	2	2.7	0	0.0
Blood-borne viral diseases								
Hepatitis B (newly acquired)	17	1.9	27	3.5	1	1.4	2	3.6
Hepatitis B (unspecified)*	318	35.9	261	33.7	5	6.8	38	67.6
Hepatitis C (newly acquired)	49	5.5	34	4.4	2	2.7	4	7.1
Hepatitis C (unspecified)*	465	52.5	471	60.9	37	50.2	36	64.0
Hepatitis D	4	0.5	1	0.1	0	0.0	0	0.0
Sexually transmissible infections								
Chancroid (soft sore)	0	0.0	0	0.0	0	0.0	0	0.0
Chlamydia (genital)	3,164	356.9	2,982	385.3	140	189.8	375	667.1
Donovanosis	0	0.0	0	0.0	0	0.0	0	0.0
Gonorrhoea	229	25.8	235	30.4	18	24.4	195	346.9
Syphilis (infectious)	69	7.8	30	3.9	2	2.7	8	14.2
Syphilis (non-infectious)*	23	2.6	27	3.5	0	0.0	7	12.5
Other diseases								
Acute rheumatic fever	1	0.1	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob disease	0	0.0	4	0.5	0	0.0	0	0.0
Haemolytic uraemic syndrome	0	0.0	0	0.0	0	0.0	0	0.0
Legionellosis	34	3.8	17	2.2	2	2.7	5	8.9
Leprosy	1	0.1	0	0.0	0	0.0	0	0.0
Melioidosis	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal infection	12	1.4	6	0.8	0	0.0	0	0.0
Tuberculosis*	54	6.1	31	4.0	0	0.0	0	0.0
Total	**7,630**	**860.7**	**6,987**	**902.8**	**490**	**664.4**	**887**	**1577.8**

Region

Great Southern (n=56,688)		Kimberley (n=32,825)		Midwest (n=62,111)		Pilbara (n=45,975)		Southwest (n=150,356)		Total (n=2,138,491)	
Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
43	75.9	35	106.6	45	72.5	37	80.5	198	131.7	**1833**	**84.8**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**2**	**0.1**
4	7.1	53	161.5	10	16.1	14	30.5	14	9.3	**163**	**7.6**
0	0.0	0	0.0	0	0.0	2	4.4	0	0.0	**22**	**1.0**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**6**	**0.2**
0	0.0	0	0.0	1	1.6	0	0.0	0	0.0	**8**	**0.4**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**3**	**0.1**
7	12.3	9	27.4	12	19.3	9	19.6	32	21.3	**425**	**19.8**
19	33.5	94	286.4	29	46.7	50	108.8	59	39.2	**851**	**39.4**
2	3.5	39	118.8	11	17.7	19	41.3	9	6.0	**171**	**7.9**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**8**	**0.4**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**7**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	**7**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
32	56.4	34	103.6	14	22.5	16	34.8	29	19.3	**1018**	**47.5**
0	0.0	0	0.0	0	0.0	0	0.0	2	1.3	**8**	**0.4**
1	1.8	60	182.8	0	0.0	3	6.5	0	0.0	**95**	**4.4**
13	22.9	21	64.0	9	14.5	13	28.3	68	45.2	**462**	**21.4**
2	3.5	18	54.8	5	8.1	9	19.6	8	5.3	**161**	**7.4**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**7**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**1**	**0.0**
10	17.6	2	6.1	7	11.3	5	10.9	20	13.3	**356**	**16.6**
3	5.3	1	3.0	5	8.1	7	15.2	32	21.3	**516**	**23.8**
21	37.0	19	57.9	28	45.1	16	34.8	70	46.6	**758**	**35.4**
0	0.0	1	3.0	0	0.0	0	0.0	0	0.0	**1**	**0.0**
5	8.8	8	24.4	8	12.9	9	19.6	20	13.3	**177**	**8.1**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**2**	**0.1**
2	3.5	2	6.1	1	1.6	4	8.7	5	3.3	**99**	**4.4**
0	0.0	0	0.0	3	4.8	2	4.4	1	0.7	**85**	**3.8**
12	21.2	44	134.0	69	111.1	65	141.4	116	77.2	**881**	**40.9**
1	1.8	15	45.7	3	4.8	1	2.2	3	2.0	**339**	**15.7**
8	14.1	0	0.0	0	0.0	0	0.0	1	0.7	**19**	**0.9**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	**1**	**0.0**
0	0.0	1	3.0	0	0.0	0	0.0	0	0.0	**6**	**0.3**
1	1.8	0	0.0	0	0.0	0	0.0	0	0.0	**6**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	**48**	**2.2**
7	12.3	31	94.4	7	11.3	19	41.3	13	8.6	**713**	**32.7**
3	5.3	1	3.0	0	0.0	3	6.5	2	1.3	**100**	**4.6**
17	30.0	24	73.1	39	62.8	43	93.5	83	55.2	**1,279**	**56.8**
1	1.8	0	0.0	0	0.0	0	0.0	0	0.0	**6**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
153	269.9	592	1803.5	341	549.0	370	804.8	448	298.0	**8,643**	**400.5**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
13	22.9	624	1901.0	101	162.6	244	530.7	20	13.3	**1,692**	**78.5**
1	1.8	29	88.3	0	0.0	40	87.0	0	0.0	**179**	**8.4**
0	0.0	45	137.1	0	0.0	4	8.7	1	0.7	**108**	**5.0**
0	0.0	4	12.2	0	0.0	1	2.2	0	0.0	**6**	**0.3**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**4**	**0.2**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**0**	**0.0**
5	8.8	2	6.1	3	4.8	1	2.2	2	1.3	**72**	**3.3**
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	**1**	**0.0**
0	0.0	5	15.2	0	0.0	1	2.2	0	0.0	**6**	**0.3**
1	1.8	1	3.0	2	3.2	1	2.2	1	0.7	**24**	**1.1**
1	1.8	3	9.1	1	1.6	3	6.5	0	0.0	**97**	**4.3**
388	**684.4**	**1,817**	**5535.4**	**754**	**1214.0**	**1,011**	**2199.0**	**1,260**	**838.0**	**21,630**	**1011.5**

Table 2. Number and rate of notifications in WA by region, 2008 (see page 6 for notes)

(Thailand x 3, Japan x 1) and four were acquired locally; no links to confirmed cases were identified for the latter cases. Of the locally acquired cases, two were co-primary cases presumably exposed at the same time. The number of measles notifications remains historically low with the exception of the spike in 2006 of 30 cases, which were mostly attributed to an outbreak among unvaccinated children associated with a touring religious group. Similarly, the number of **rubella** cases remains low with seven notifications in 2008; of which five were acquired overseas, mainly in South-East Asia. In contrast, **mumps** notifications continued to be elevated as a result of a sustained outbreak which commenced in mid-2007 predominantly among teenage and young adult Aboriginal people in the Kimberley region.

After consecutive annual declines since 2004, the number of **pneumococcal** notifications increased from 132 to 161 in 2008. The previous reduction reflected the introduction of the pneumococcal vaccination program in 2005 and the recent increase has been attributed to an increase in disease caused by non-vaccine serotypes.

After relatively few cases in 2007, **pertussis** notifications increased in 2008 to 462 cases, of which 25% were less than 15 years old.

Influenza activity in 2008 was similar to that of 2007, with just over 1000 notifications reported.

Varicella-zoster notifications increased from 1368 in 2007 to 1630 in 2008 and comprised 22% chickenpox, 32% shingles and 46% unspecified laboratory-confirmed cases.

Vector-borne diseases

Chikungunya virus was made a notifiable disease in May 2008. There were subsequently two Chikungunya notifications, both in persons who acquired their infections in Malaysia where a large outbreak was ongoing. One **Murray Valley encephalitis** case was notified: a non-Aboriginal adult from the Kimberley region who died. Notifications of **Ross River virus** and **Barmah Forest virus** increased compared to 2007 but were similar to 2006 levels. The Pilbara and Kimberley regions recorded the highest notification rates for both these viruses.

There was a near doubling of **dengue fever** notifications, from 54 in 2007 to 99 cases in 2008. All infections were acquired overseas, mainly in South-East Asia, with over a third of cases (35%) acquired in Bali. **Schistosomiasis** notifications have been elevated for the past four years, reflecting increased migration under humanitarian programs, mostly from African countries. Of the 339 cases notified in 2008, only 34 were Australian-born and most had travelled to Africa.

Zoonotic diseases

Notifications for brucellosis, leptospirosis, psittacosis and Q fever continue to be very low and stable. There was a small increase in psittacosis notifications reflecting commencement of laboratory reporting by one pathology laboratory in mid-2008. The single case of **leptospirosis** was acquired in Borneo.

Blood-borne viral diseases

The number of "newly acquired" **hepatitis B** notifications remained relatively stable while the upward trend in "unspecified" hepatitis B notifications continued; however, much of the increase in 2008 (70%) was attributed to the inclusion of previously missing disease notifications from a major pathology laboratory. Similarly, a proportion (40%) of the increase in "unspecified" **hepatitis C** notifications could be attributed to previously missing laboratory disease notifications. There was a small increase in the number of "newly acquired" hepatitis C notifications compared to 2007, although this was still lower than the annual average number of the previous three years.

In 2008, notification rates were 2.6 and 3.7 times higher in Aboriginal compared to non-Aboriginal West Australians for both hepatitis B and C, respectively. Rates for both diseases were also highest in the remote regions of WA.

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Sexually transmissible infections

Genital chlamydia notifications increased again in 2008, to be almost double the number of cases notified in 2004. The increase has been attributed to more testing, inclusion of laboratory notifications and a real increase in infections. In 2008, 64% of notified cases were aged 15 – 24 years and there were more females than males (ratio 1.4:1).

There was a small decline in **gonorrhoea**

notifications in 2008 following annual increases in the preceding four years. About half the notified cases (52%) were aged 15 – 24 years and males outnumbered females (ratio 1.3:1). Notification rates for both chlamydia and gonorrhoea were highest in the remote regions, particularly in the Kimberley region.

Infectious syphilis notifications continued to increase in 2008, with over 9 times the number of cases reported in 2005. The increase was attributed to an ongoing outbreak among men who have sex with men in the Perth metropolitan area and an outbreak among heterosexual Aboriginal people, most of whom were from the Pilbara and Kimberley regions.

There were 76 cases of **human immunodeficiency virus** infections notified in 2008, similar to the previous two years but over double the number notified in 2004. The median age of notified cases was 35 years, four cases were Aboriginal and 58 (76%) were male. Of all cases, 39% were men who have sex with men, 26% were heterosexual men, 23% were heterosexual women and 8% reported injecting drug use as their major risk category.

Other diseases

Acute rheumatic fever notifications were reported for the first complete year in 2008. There were six cases notified with a median age of 11 years (range 8 – 22 years). All were Aboriginal people and most lived in the remote areas of the state (Kimberley 4; Pilbara 1; North Metropolitan 1).

The number of **invasive meningococcal disease** notifications was low for the third consecutive year, following a gradual decline from a peak of 86 cases in 2000. Of the 24 cases notified in 2008, 9 (38%) were less than two years old. With the exception of one case which was not typeable, all cases were identified as serogroup B. One death was reported. There have been no serogroup C notifications since 2006, reflecting the success of the introduction of the group C conjugate vaccine into the childhood immunisation schedule in 2003.

Notifications of **legionellosis** decreased again in 2008 after a small peak in 2006. The majority (90%) of infections continue to be due to *Legionella longbeachae*, the type associated with exposure to potting mix.

Tuberculosis notifications increased from 60 to 97 cases in 2008; all cases were born overseas. Six **meliodosis** cases were notified in residents of the Kimberley and Pilbara regions; four were adults (age range 26 – 46 years) and two were children aged nine and 12 years. Both the children presented with non-healing ulcers from which *Bordetella pseudomallei* was isolated.

A single **leprosy** notification was reported in an elderly Aboriginal adult from the Pilbara region who had previously been treated for leprosy in the early 1980s. There were four cases of **Creutzfeldt-Jakob disease** notified in older adults.

Panvax H1N1 Vaccine Guidelines:

Age	Dose	Formulation	Number of doses
6 months - 35 months	0.25mL (7.5µg)	Panvax H1N1 Junior prefilled syringe **OR** Panvax H1N1 multidose vial	2 doses at least 4 weeks apart
3 years – 9 years	0.5mL (15µg)	Panvax H1N1 multidose vial	2 doses at least 4 weeks apart
10 years and above	0.5mL (15µg)	Panvax H1N1 multidose vial	1 dose

Placing your order:

- Initial orders for Panvax H1N1Junior prefilled syringe 0.25mL (7.5µg) should be placed as soon as possible.
- Existing Panvax H1N1 multidose vials can be used for all age groups from 6 months onwards.
- Product information and consent forms for optional use will be distributed with the vaccine.
- VacPacks are no longer being distributed with vaccine orders.
- Metropolitan GPs should order direct from CSL, regional GPs should order via their regional hospital pharmacy.

New Sexually Transmitted Infections Contact Tracing Training Package

Between 1999 and 2008, the number of chlamydia and gonorrhoea notifications in WA more than trebled from 2,900 notifications in 1999 to 10,348 in 2008. This increase is almost all attributable to increased chlamydia notifications. Without treatment, 10 per cent of females with chlamydia will develop pelvic inflammatory disease and 10 per cent of these will develop infertility. Also of concern is the increase in infectious syphilis cases.

Contact tracing is the process of identifying and informing the contacts of a person with an infection so they can get adequate support, testing and treatment. Due to the increase in notifications, the capacity of the current health workforce in WA to undertake contact tracing to stop the spread of sexually transmitted infections (STIs), including the human immunodeficiency virus (HIV), is inadequate. In an attempt to address this problem, the Department of Health's Sexual Health and Blood-borne Virus Program has funded the Australasian Society for HIV Medicine (ASHM) to develop and pilot an on-line educational package on contact tracing for community and public health nurses and other primary health care providers. The package will focus particularly on priority populations in rural and remote areas of WA.

This training package will be an interactive, experience-based, "how to" course for health care providers who are currently doing, or are planning to do, contact tracing for STIs, including HIV/AIDS.

Seven core modules have been developed, each of 5-10 minutes in length, which address key issues such as talking to clients and contacts about contact tracing, managing personal safety, and the importance of confidentiality and privacy. Two additional modules address working with Aboriginal communities and HIV testing in custodial settings. At the end of each module participants will be able to test the knowledge and skills they have gained by completing a short quiz.

This educational resource will be piloted with health care providers in late 2009 and, on completion, will be hosted on the ASHM website: www.ashm.org.au

For more information, please contact Sue Laing, Sexual Health and Blood-borne Virus Program. Email: susan.laing@health.wa.gov.au

Hepatitis C E-learning Programs for GPs and Nurses

Edith Cowan University and the WA Department of Health have developed an innovative free online learning program for GPs interested in providing shared care and antiviral therapy for patients with hepatitis C. There is also a free online learning program for health professionals, such as nurses, involved in the shared care of patients with hepatitis C.

The learning program consists of three modules:

- Module 1: Overview of hepatitis C, prevention and treatment strategies
- Module 2: Assessment and management of hepatitis C along the continuum of care
- Module 3: Advanced management of hepatitis C including antiviral therapy.

Each module takes about four hours to complete, and can be returned to at any time.

GPs can gain 40 Category 1 Royal Australian College of General Practitioners Quality Assurance & Continuing Professional Development (RACGP & CPD) points and 12 Australian College of Rural and Remote Medicine Professional Development Program points (ACCRM PDP) by completing the 3-part Active Learning Module or 8 Category 2 RACGP & CPD points and 4 ACCRM PDP points for completing individual modules. Those GPs who complete all 3 modules can apply for S100 prescriber status for the antiviral drugs pegylated interferon and ribavirin, prescribed in conjunction with a tertiary liver clinic.

Nurses can gain 5 Continuing Nurse Education (CNE) points per module or 15 CNE points for the successful completion of 3 modules.

For more information visit the website at:

http://hepc.ecu.edu.au
or contact hepc@ecu.edu.au