



## From the Director's desk

Disease Watch this month has a focus on an emerging problem with community-associated MRSA strains of particular virulence. CDCD has undertaken a review of one such strain and key learnings for General Practice of warning signs in these patients are outlined in the article. The Department of Health is conducting 'seek and destroy' campaigns against these strains in the hope of delaying endemic transmission within WA.

The paediatric influenza vaccination efficacy study got off to a slow start with delays in vaccine availability, however, supplies are now flowing freely. I commend the program to all GPs and remind them that children in their first year need two doses one month apart to be protected. Influenza in the United States this year was the worst since 2003/4 so I urge GPs to vaccinate as many children as possible. Several doctors have requested a reference point for information on the benefits of childhood influenza. Please see our website on Childhood Flu Vaccine for details: [www.public.health.wa.gov.au/1/683/2/childhood\\_flu\\_v.pm](http://www.public.health.wa.gov.au/1/683/2/childhood_flu_v.pm)

Paul Van Buynder, April 2008

## Virulent strains of community-associated MRSA: Key messages for General Practice

### The scope of the problem

Specific virulent strains of community-associated MRSA (CA-MRSA) are an increasingly prevalent cause of staphylococcal disease in WA affecting otherwise healthy people outside of the healthcare setting. These strains carry unique virulence factors including the Panton-Valentine leukocidin (PVL) gene which is associated with tissue necrosis and abscess formation. In 2007, there were 405 PVL-producing CA-MRSA cases detected in WA, which represents 9 % of the total number of MRSA isolates.

The virulent strains predominantly cause purulent skin and soft tissue infections (SSTIs), however severe necrotising SSTIs, bloodstream infections, septic arthritis and necrotising pneumonia have been documented in the international literature and also reported in WA. Elsewhere in the world such strains are becoming established as endemic pathogens in the community, with major adverse health outcomes.

WA Health has commenced a program to reduce the risk of this occurring in WA. After January 2008, people from whom these clones of CA-MRSA are identified are being contacted by Population Health Unit (PHU) staff and provided with information about the infection, topical decolonisation treatment and hygiene advice. Screening of household contacts is offered to detect asymptomatic carriers. The case's GP is contacted by the PHU.

### Lessons from Communicable Disease Control Directorate (CDCD) follow up of selected cases

One CA-MRSA strain (USA300) has rapidly emerged in the USA as the leading causative pathogen of SSTIs with onset in the community. CDCD recently conducted retrospective follow-up of 28 people from whom USA300 was identified in WA between January 2004 and December 2007. Staff interviewed and arranged screening of the cases and also arranged decolonisation of persistent carriers or recently identified cases. Two cases had nasal USA300 colonisation found on screening without reporting an infection. The remaining patients reported SSTI with the features described in the following table.

*...story continued overleaf...*



Features of initial infection reported by case	Number reported	%
Rapid escalation in the severity of symptoms	22	(85 %)
Multiple boils or abscesses associated with the episode of infection	9	(35%)
Recurrent episodes of infection	16	(61%)
Required hospitalisation for treatment	11	(42%)
Required extended treatment (long-term antibiotics, home healthcare)	7	(27%)

Twenty one cases (81%) presented to a GP for initial treatment and 5 (19%) to an Emergency Department (ED). Most cases received initial antibiotics (generally beta-lactam drugs) to treat their infection, but many did not recall specimens being obtained for culture until subsequent visits. Fourteen cases (54%) reported symptom progression and repeat presentations before antibiotics were changed and/or incision and drainage was performed.

Laboratory confirmed transmission occurred within 2 households and was strongly suspected on clinical grounds in a further 3 households. The experience of these households is typified in the Case Report. In this small cohort of USA300 cases, 16 (57%) had travelled or lived overseas just prior to presentation including 10 (36%) who had travelled to the USA. Overseas travel may not be as significant for related virulent MRSA strains emerging within Australia, but the presentation and management will be similar.

## Summary of USA300 follow-up

- Most USA300 infections in WA cause skin and soft tissue infections, and occur in people with a history of overseas travel
- Infections frequently present as multiple boils or abscesses, rapidly progress, often recur and can spread within households
- Most cases initially presented to a GP and nearly one half required hospitalisation
- Patients with this infection reported delays in definitive diagnostic testing and treatment

## Primary care recommendations for diagnosis and management of CA-MRSA SSTI's

- Obtain a family history of SSTI and maintain a high level of suspicion for CA-MRSA in patients with rapidly progressing or multiple infections, areas of necrosis and recurrent SSTIs.
- Send specimens for microscopy, culture and susceptibility testing whenever possible.
- Follow-up results and revise antibiotic therapy according to susceptibility testing (Note: MRSA infections are resistant to all beta-lactam antibiotics i.e. all penicillins and cephalosporins)
- Incise and drain abscesses and boils - this may be the only treatment required for small lesions and may also limit transmission.
- Monitor the response to therapy.
- Close contacts of persons with CA-MRSA skin infections have a higher likelihood of acquiring a similar infection, so infection control issues and education are important.

**Promote good personal hygiene and handwashing to prevent spread.**

## Case Report

James (8yrs) presented to the Emergency Department (ED) with 3 abscesses on his lower leg that were becoming larger and more painful. Nine days earlier James had presented to his GP with a small cluster of boils and was prescribed Augmentin®. Specimens were not obtained for culture. Two months prior to this visit, James had attended the same ED with boils that resolved after incision. This time, medical staff at the ED incised and drained the abscesses, sent a specimen to the laboratory and commenced him on dicloxacillin. MRSA was subsequently cultured and James was recalled to have his antibiotic treatment adjusted to co-trimoxazole. After laboratory typing results were sent to the Health Department, James's family was contacted as part of a new community MRSA control program.

James's mother Ann reported that for the last 6 months, soon after she returned from a trip to Germany and Thailand, she had experienced recurrent skin infections on her leg, face and scalp. She had consulted a GP on three occasions and taken several courses of Flucloxacillin prior to a culture being taken. James's 10 year old sister also had an episode of boils which resolved without antibiotics after incision and drainage.

Laboratory typing results identified that the infections found in this family were caused by a single strain of CA-MRSA (USA300).

## Additional Resources

WA Public Health website contains the WA program guidelines, GP Guidelines, decolonisation treatment instructions, hygiene advice and fact sheet:

[www.public.health.wa.gov.au/4/1068/3/4-1068/display/management\\_of\\_s.pm](http://www.public.health.wa.gov.au/4/1068/3/4-1068/display/management_of_s.pm)

**Staphylococcus aureus: a guide for the perplexed:**

[www.mja.com.au/public/issues/184\\_08\\_170406/joh10174\\_fm.html](http://www.mja.com.au/public/issues/184_08_170406/joh10174_fm.html)

**The Australian Doctor. 23 February 2007  
(How to treat section : Community MRSA infection):**

[www.australiandoctor.com.au](http://www.australiandoctor.com.au)

## Review of Vaccine Distribution processes in Western Australia

Vaccine distribution in Western Australia is relatively uncontrolled by comparison to other states. General Practitioners (GP) order by contacting the distribution centre with no approval process required. In other states central control is undertaken by the Department of Health.

For example, in SA a record of each GP usual practice numbers is kept and variations must be justified based on demonstrated new patients or additional vaccine is not supplied. Similarly, in Queensland restrictions are placed on ordering. In both of those states **vaccination coverage rates are better than in WA** but vaccine distribution relative to the eligible population is **over 20% less than in WA**.

So far this financial year WA has distributed over 120% of the cohort of Prevenar and 160% of the cohort of Infanrix Penta, to name just two. As a result, Federal funding for vaccines has been exceeded by \$2.5 Million.

Most recently CDCD has distributed 100% of the influenza vaccine for the elderly cohort (we usually achieve 80% coverage) but GPs are already suggesting more is required for the program. It is not possible for this to be occurring without significant leakage of vaccine for the elderly to the non-eligible or the private market. With the increased cost of new vaccines the continuation of this situation is untenable.

WA is now reviewing the distribution process. A move to a similar system as other jurisdictions appears inevitable.



## Hepatitis A and B vaccines for patients with hepatitis C

In 2005, the WA Department of Health began funding a program whereby all medical practitioners who notify a case of hepatitis C receive order forms to enable them to provide hepatitis A and hepatitis B vaccine for that patient, in accordance with recommendations contained within the Australian Immunisation Handbook.

[www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home](http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home)

On receipt of either a laboratory or a doctor's notification of a hepatitis C case (newly notified on or after 1st September 2005), a vaccine order form is posted from CDCD to the notifying doctor. Vaccines are delivered to the patient's general practitioner either by CSL (metropolitan area) or via the appropriate regional hospital's pharmacy.

Some organisations (such as the Western Australian Substance Users' Association, WA AIDS Council, Street Doctor) with high case loads of patients at high-risk of contracting hepatitis C (e.g. people who inject drugs, men who have sex with men) may order vaccines directly from CSL for these patients.

Further information about this vaccination program is available in the Department of Health's Operational Directive '*Guidelines For The Provision Of Hepatitis A and B Vaccine to Adults in Western Australia at Risk of Acquiring these Infections by Sexual Transmission and Injecting Drug Use*', which can be accessed at:

[www.health.wa.gov.au/circulars/circular.cfm?Circ\\_ID=11987](http://www.health.wa.gov.au/circulars/circular.cfm?Circ_ID=11987)

Through this website, guidelines for vaccinating people at risk of acquiring hepatitis B or A via other transmission routes are also available (see OP 1529/02 "Hepatitis B vaccination program" and OP 1390/01 "Hepatitis A").

For further information about this program contact Dr Donna Mak, Public Health Physician (telephone 9388 4828). ■

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## Choices & Responsibilities for HIV Positive People

'Choices & responsibilities for HIV positive people' is a recently published booklet designed to be given to people with newly diagnosed HIV. The objective of the booklet is to assist with ensuring patients receive comprehensive medical advice about this condition and also that the HIV positive person is provided with reassuring general advice about lifestyle matters. This booklet has a strong emphasis on providing clear information about public health concerns. It is essential to convey good public health information to patients at the earliest possible stage to support prevention and reduce the transmission of the infection to others. The DoH consulted widely in the development of the booklet and key stakeholders involved in HIV/AIDS gave feedback and suggestions. The support of these colleagues is acknowledged.

To order copies of this publication please go to [www.population.health.wa.gov.au/ordering/](http://www.population.health.wa.gov.au/ordering/) and quote the item number for ordering as follows:

- o 'Choices & responsibilities for HIV positive people' - HP5255

If there are problems with the on-line system please contact the Miriam Venosa on (08) 9388 4841 or email [miriam.venosa@health.wa.gov.au](mailto:miriam.venosa@health.wa.gov.au)