



# SADI Statewide

Newsletter of SA Divisions of General Practice Inc.

June 2006

## Communicable diseases: old threats are new again

Tori Wade

In this edition we have several articles on the theme of communicable diseases. With the increased, and obviously necessary focus on chronic disease management, it is important that we don't take our eye off the communicable diseases ball.

Don Allan from Adelaide Western General Practice Network writes about early detection and enhanced surveillance of communicable diseases in general practice using the Practice Health Atlas.

Janet Devlin considers the possible psychological impact of an influenza pandemic, and Suzanne Keen has given us articles on immunization myths and meningococcal disease.

Janet Brinkworth reminds us of the link between lifestyle risk factors and infectious diseases, and Jill Poulton outlines Ian Frazer's work to develop a vaccine against the strains of HPV that cause cervical cancer.

However, if there was a prize offered for the most talked about communicable disease, this would probably go to the one that hasn't happened yet, namely the threat of the next influenza pandemic. The World Health Organisation has been trying to raise people's awareness of this possibility for many years, and it is now well and truly on the radar screen. This gives us the unique opportunity to prepare ahead of time, and to set up a response system that will be useful for other types of disasters as well. Of course, we don't know when the next influenza pandemic will occur, how many people will be affected, or how severely they will be affected, i.e. what degree of morbidity or mortality will result. However,

because the consequences are so potentially catastrophic, any standard risk analysis process gives you this answer: *Risk extreme, action should be immediate*. This has led to what some people are (rather unkindly) calling a 'plandemic', consisting of a great many meetings, workshops and action plans under construction.

The reason why general practice and Divisions of General Practice should be so involved in this planning is because in the event of an influenza pandemic much of the health care needed has to take place in the community. Hospitals would soon be overwhelmed by the numbers of people affected. All non-essential elective surgery would be cancelled, and extra ventilated beds would have to be brought into use, but this extra capacity in intensive care and medical admissions would be insufficient to deal with the scale of the problem.

We have begun to work out what can be provided in the community, and what resources are required to do this. Last year, when I wrote a first draft of the primary care response, I started to think through what assets we already have, and there are a great number of these.

As well as the network of general practices and the coordinating infrastructure of Divisions, we have community pharmacy, RDNS, local government, the Advanced Community Care Association (already delivering packages of care as an alternative to hospitalization), the locum service GP Solutions and a large number of organisations that deliver personal care and welfare services. All of these will need to work in an

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## Australian Safety and Efficacy Register of New Interventional Procedures—Surgical

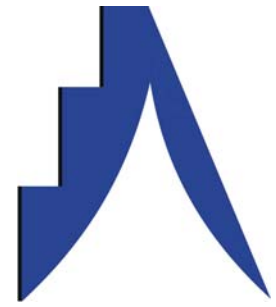
The Australian Safety and Efficacy Register of New Interventional Procedures—Surgical (ASERNIP-S) is a program of the Royal Australasian College of Surgeons.

ASERNIP-S conducts systematic literature reviews on the safety and effectiveness of new surgical techniques. We also conduct clinical and research audits or trials, identify and assess new and emerging techniques by horizon scanning, and produce clinical practice guidelines.

The aim of ASERNIP-S is to improve the quality of health care through the wide dissemination of our evidence-based research to surgeons, health care providers and consumers. Consumer summaries and more recently patient information sheets on our reviews are prepared by multidisciplinary teams comprising surgeons,

consumer representatives and researchers. These documents are available on the consumer information page of our website and some have been distributed to surgeons and targeted consumer groups in Australasia for dissemination through their networks.

General practitioners may also find this information useful. For example, one of your patients may be advised to have a procedure reviewed by ASERNIP-S, or may be interested in having the procedure. Recently representatives of the Royal Australian College of General Practitioners, the Divisions of General Practice and ASERNIP-S met to explore ways in which doctors and patients could learn more about this research and how to access it. Via this newsletter, we



will regularly notify general practitioners of new reviews or consumer information we produce. Your comments or suggestions regarding our publications are very welcome.

All our publications are available at [www.surgeons.org/asernip-s](http://www.surgeons.org/asernip-s).

If you would like more information on the activities of ASERNIP-S please contact Professor Guy Maddern, Surgical Director, telephone 61 8 8363 7513, fax 61 8 8362 2077 or email [College.asernip@surgeons.org](mailto:College.asernip@surgeons.org).

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*(Communicable disease: cont. from page 1)* integrated fashion. To achieve this, in addition to following an overall state plan, regional planning should bring local organisations together to ensure that the best possible response can be mounted in each area. For example, the Adelaide Hills Division, together with other organisations in the Hills, has taken a lead in developing a local plan.

Individual organisations, such as general practices, pharmacies, and aged care facilities, to name only a few categories, should also develop their own plans, covering what response they are capable of producing, and how they can keep their own organisation running if, say, a quarter of their staff are unwell, and others need to care for family members. In terms of general practice, we are thinking about things that may help, such as the innovative use of telephone

consultations and practice nurses. However, good ideas also need to be tested to see if they are actually practical to implement.

Considering the medical response to an influenza pandemic, the main issues we have to deal with are the best use of personal protective equipment (masks, gloves, gowns and eye protection), anti-viral medications and vaccination. National and state stockpiles of equipment and pharmaceuticals already exist and are being increased, however it is our job to plan for how these can best be deployed on the ground. For example, the logistics required to vaccinate the entire population of South Australia in as short a time as possible, and then repeat this six weeks later, are very thought provoking.

All this planning is part of a broader process, because if a quarter of the whole population is unwell over a

period of several weeks to several months (and this is just a working estimate), it is also necessary to consider how essential services such as electricity, communications, food supply and law and order can be maintained. The planning committee at the Department of Health is reporting to a cross-government committee that is bringing together all the other Departments and the industry sectors that are affected. Many interesting questions have been raised, such as “exactly how do you decide what is an essential service?”

The effectiveness of our planning will be tested by exercises later in the year, both on the desktop and in the field. One of the main benefits of Divisions of General Practice has been to bring together the separate silos in health care, and influenza pandemic planning gives us a further opportunity to continue this work. ■

# Communicable Diseases: Early detection tools in general practice and enhanced surveillance

Don Allan, Adelaide Western General Practice Network



As indicated in the website of the Population Health Division (PHD) of the Department of Health and Ageing, communicable diseases are a significant population health priority in Australia and internationally.

The problems facing Australia today are diverse and include foodborne diseases, emergence of antimicrobial resistant bacteria, sexually transmitted diseases, vectorborne disease and vaccine preventable diseases. According to the PHD, new and emerging diseases, such as bat lyssavirus and bovine spongiform encephalopathy (BSE), as well as the threat of an intentional release of a biological agent, pose potential threats to population health.

The PHD comprehensive website at [www.health.gov.au](http://www.health.gov.au) includes sections for health emergency and response, pandemic preparedness and the Australian Management Plans for Pandemic Influenza.

## Current detection tools in general practice

General practice has played an important role in the early detection of many communicable diseases. There continues to be a strong relationship between general practices and state and local government authorities when it comes to timely reporting of outbreaks of communicable diseases.

Nevertheless, the increasing threats of potential pandemics, terrorism and the problems created by globalisation raise the question as to whether more can be done in general practices.

The advent of electronic databases in general practice as well as the wider adoption of broadband as a

means of communication, suggest that there are opportunities for general practices to increase the scope of their contribution to communicable diseases and enhanced surveillance.

## Possibilities arising from the Practice Health Atlas

At the Adelaide Western General Practice Network (formerly the Adelaide Western Division of General Practice), staff have assisted general practices to improve the quality of their electronic databases.

A key initiative has been the development of the Practice Health Atlas (PHA). This is a decision support tool that aims to inspire general practice teams to reflect on their activities and to develop innovative business models for more effective health care services and outcomes. Central to the development of the PHA is the use of relevant, accurate and timely data, as well as using such data to predict future health care needs and trends (i.e. intelligence).

Based on the integration of practice clinical data with other relevant data sources (for example CENSUS), its objectives include developing a professional culture around quality health data, and synthesising aggregated de-identified general practice data at practice and Network (i.e. Divisional) level, and beyond, to assist with local health needs assessment, planning, and funding. The AWGP Network utilises a range of software tools, such as geographic information systems (GIS), clinical, billing and statistical software, and consults with a practice to understand its clinical data management approach.

Evaluation of the tool occurs through group feedback sessions and amongst the GPs and staff that have been engaged to date. It has demonstrated its potential to fulfil objectives in outcome areas, such as data quality and management, team-based care, proactive practice population health care and business systems development (improved health care service delivery), thereby contributing to improved patient health outcomes.

## Epidemiology of the Practice Health Atlas

While previous attempts have been made to use GIS techniques to study population health within Divisions, the use of general practice based data has been limited.

The PHA comprises three sections: epidemiology, business and clinical modelling, and access to services and networks (as depicted by their corresponding logos). In this article, we refer only to the epidemiology section because of its potential to assist with early surveillance of communicable diseases.

Each component of the PHA has been constructed as a decision support tool to assist general practice in day-to-day operations. It provides for a continual quality improvement cycle to be established in the practice to monitor clinical and business performance. Hence, over the long term, the aim is to build on clinical and business systems to improve health outcomes and develop innovative services for people through general practices in the western area of Adelaide.

*(Continued on page 4)*

*(Practice Health Atlas: Cont. from page 3)*

The epidemiology section provides a baseline snapshot of the practice's patient population demographics. It can act as a guide to answering the following questions:

- Where do the practice's patients live?
- What is their age/sex distribution?
- How does this compare to wider population demographics?
- How many have chronic diseases?
- What does this all look like on a map?

The patient population is displayed using mapping techniques. The top postcodes in which the majority of patients live are placed in the context of the broader community profile, using 2001 Census of Population and Housing data. These include an indication of the market share of the practice and socioeconomic advantage/disadvantage.

Patient profiles are derived and mapped, which visually depicts the spatial distribution of subsets of the patient population. These techniques, which aim to improve the practice's understanding of the catchment of its patient population, can greatly assist early surveillance at a regional or metropolitan level. It is clear that the potential for improved surveillance is increased if each general practice has clean, geocoded data about its patient population.

### **Key issues**

The key issue faced by the AWGP Network when compiling a Practice Health Atlas relates to the accuracy of the data entered and/or stored within the general practice. This necessitates a thorough 'cleansing' process of the data initially, and consultation with the practice about their data management approach (or sometimes lack thereof).

Once validated, the data can be used to assist the practice in its modelling. If complete health data have been collected on each patient, the power of modelling is greatly improved. If only partial data have been collected, the power of the modelling, whether for business purposes or clinical improvement, is diminished.

A technical challenge is the need to adapt the model to different clinical systems. The AWGP Network's approach is to refine the model with the most common software used by practices in our region, and thereafter to extend it to other software. Interest has been shown by practices that are not computerised, but the PHA can only be efficiently done for practices that have clinical software.

Once these issues can be completely resolved, the potential for tools such as the Practice Health Atlas to contribute to improved surveillance at the local level is significant.

### **Privacy issues**

This article has identified the opportunity for general practices that have improved, clean, geocoded data to play a role in enhanced surveillance of communicable diseases and other bio-terror threats.

However, issues of privacy relating to general practices sharing their de-identified data with public health authorities have not yet begun to be explored. If these issues can be worked through, the potential to increase the protection of society against international threats could be improved. There is a definite role for local Divisions of General Practice as well as the State Based Organisations to play a role in these negotiations with State authorities.

### **Summary**

The Practice Health Atlas is an evolving general practice decision-support tool with multiple potential uses. Amongst the GPs and staff that have been engaged to date, it has demonstrated its potential to develop a professional culture around quality health data, the utility of integrating and synthesizing data with various other sources, and as a driver of innovation in health care service delivery.

### **Further information**

Adelaide Western General Practice Network, telephone (08) 8244 3822, email [awgpn@awgpn.org.au](mailto:awgpn@awgpn.org.au). ■

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*(Healthy Lifestyle, continued from page 6)*

### **Risky Drinking**

Vitamin C is also depleted by the chemical action of alcohol on your system. A hangover is caused by a combination of the toxic by-product of alcohol metabolism (acetaldehyde), dehydration, and Vitamin A, B (particularly B6) and C depletion. In acting as an antioxidant, Vitamin C is important to help fight the cellular damage alcohol consumption can cause.

### **Physical Activity**

Getting enough exercise strengthens your immune system to fight infection. Research shows that when we exercise endorphins are released giving us a sense of well being and levels of stress hormones drop. This allows an increase in white blood cell production which increases immunity.

### **Weight Management**

Several reports have demonstrated that obesity is associated with altered immune function and chronic low-grade inflammatory status,

specifically that obese individuals have a higher incidence and severity of infectious diseases.

### **Lifescrpts Can Help**

Lifescrpts provides a framework for GPs, practice nurses and Aboriginal health workers to discuss lifestyle risk factors with patients. The program involves setting new goals, providing written lifestyle prescriptions, organising reviews of lifestyle risk factors and referring patients to other services that support healthy lifestyle choices. ■

# Professor Ian Frazer: Australian of the Year

Jill Poulton

Professor Ian Frazer's selection as 2006 Australian of the Year may indicate a shift in our perception of our own national character.

The winners over the past 10 years have been, in descending order: biomedical researchers—5, sporting legends—4 and soldiers—1. While Australians are often stereotyped as incurable sports tragics, Professor Frazer's concurrent selection as Queensland's and *The Australian's* Australian of the Year may have tipped the balance in favour of health as our prime national concern. Perhaps this choice also reflects our growing national maturity in elevating to hero status researchers who doggedly solve medical mysteries, and never don colour co-ordinated lycra outfits and are never seen engaging in manic team high fives on our TV screens.

And worse still, Ian Frazer's award recognises nearly half a lifetime conjuring vaccines against viruses responsible for diseases we'd rather not discuss at the dinner table—genital warts and cervical cancer. The viruses under the microscope in this case are the human papillomaviruses (HPVs). Infection by HPVs is associated with 100% of cervical cancers. Of the 100 or so different types of HPVs, two types (16 and 18) cause 70% of all cervical cancers. And cervical cancer is a major disease worldwide—the second most common cancer in women (after breast cancer), it kills around 250 000 per year, with 94% of these deaths occurring in the developing world, the victims often women of child-bearing age.

Twenty years ago Ian Frazer saw here a preventable disease in need of a means of prevention, the practical application of his science that he had always sought.

Originally he trained as a renal physician and clinical immunologist in Edinburgh Scotland—betrayed by his accent, in spite of his Australian citizenship. In 1981 he and his wife Caroline arrived in Melbourne for a two year working visit, drawn by the great work being done at the Walter and Eliza Hall Institute. Here he continued his clinical training and pursued studies in viral immunology and autoimmunity, but decided to stay on at the end of his visit 'because of the science ... there were just so many good things going on'. In 1985 they moved to Brisbane where Frazer founded the institution he still heads today, the University of Queensland's Centre for Immunology and Cancer Research (CICR).



Not surprisingly, Australian of the Year is not the only award Ian Frazer has received, given his devotion to the cause of developing vaccines to both prevent and to treat existing infections of HPV. The Curtin Medal is awarded annually to a person who has made an outstanding contribution to medical science and is an Australian citizen, resident, or a person whose work has a significant Australian relevance.



Ian Frazer was the 2004 recipient, qualifying on both criteria for the award: a major discovery made and a lifetime's achievement in medical research. In 2005 he was presented with the inaugural CSIRO Eureka Prize for Leadership in Science, in recognition of his leadership of the team at CICR in the 15 year journey from 'the concept to something in the lab, right the way through to a product in the bottle'.

In discussing the Australian of the Year award, Professor Frazer is keen to emphasise the team nature of the work and especially the contribution of his former research partner, Dr Jian Zhou. He met Zhou in 1989 while on sabbatical in Cambridge. The two 'immigrants' became friends, sharing two common interests: seeking practical applications for their laboratory research and a desire to have Australia as their research destination. Dr Zhou followed Ian Frazer on his return to Brisbane and the two collaborated on research into HPVs as a means to the end of producing a vaccine against the viruses and the cervical cancer they cause.

Zhou's molecular biology background complemented Frazer's vaccine and immunology knowledge and they slowly progressed to the production of HPV recombinant virus-like particles (VLPs), non-infectious particles that are extremely effective in eliciting antibody production for a vaccine. This overcame the major hurdle to the development of a vaccine—the fact that HPVs are extremely challenging to culture and therefore to produce a vaccine from.

*(Continued on page 6)*

(Prof Ian Frazer: Continued from page 5)

CSL Ltd joined the collaboration in the early 1990s and in 1995 licensed the technology the group had developed to Merck. The resultant vaccine, GARDASIL™ has now had three successful international trials and Merck announced in October 2005 that 100% efficacy had been achieved in the Phase III trials. In December 2005 CSL submitted GARDASIL™ for regulatory review by the Therapeutic Goods Administration (TGA), bringing it one step closer to being available to Australian women. Sadly Jian Zhou died unexpectedly in 1999, before the team's achievements were widely acknowledged.

As Ian Frazer freely admits, there is competition as well as collaboration in the research world and in March 2006 GlaxoSmithKline submitted a marketing application for its rival cervical cancer vaccine Cervarix™, to the European Agency for the Evaluation of Medicinal Products.

Regardless of which (if either) company wins the race to market the vaccine, Professor Frazer is more than just the leader of what looks like being a financially very successful research effort – *The Age*

reported on Australia Day that he is 'expected to receive millions in royalties from the vaccine'. Judith Roberts, President of the Cancer Council of Australia pays tribute to 'the breadth of his commitment to reducing the impact of cancer' in Frazer's role as Vice President of the Cancer Council 'a not-for-profit, community-based organisation'.

And while he looks forward to the eradication of cervical cancer in Australia where currently 200 women die annually from the disease, it is in the developing countries, including Jian Zhou's native China that he looks for the maximum impact. Professor Frazer advises the Bill and Melissa Gates Foundation, the World Bank and WHO's Expanding Vaccine Initiative. He is optimistic that with funding from these bodies and the commitment of CSL and Merck to offer a differential pricing structure to developing countries, the lowest possible priced vaccine will be available where there is the greatest burden of disease. Ensuring this outcome is one of his avowed missions.

Unfortunately, not even the Australian of the Year can guarantee

translation of research into improvements in health. Medical advances must first be accepted by society, and there are already debates both in the first world and the developing nations about the possible social outcomes of vaccinating premenstrual girls against cervical cancer. It is to be hoped that solutions to these societal problems will be found so that the great benefits offered by these vaccines can be realised.

It is fitting that those who work most closely with Professor Frazer should have the final word. UQ's Acting Vice Chancellor, Professor Paul Greenfield said in congratulating him on his award

'UQ is honoured to have Ian Frazer working with us as Director of the CICR. He demonstrates beautifully how long-term, meticulous research can lead to remarkable developments for human health. Ian has never lost the focus of his work's potential to help others. Throughout his outstanding career he has put his personal interests on the backburner – and that quality alone makes him worthy of the title Australian of the Year.' ■

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## A Healthy Lifestyle Helps to Fight Infection

Janet Brinkworth

When looking at risk factors that are identified in Lifescrpts resources, it is clear that a healthier lifestyle can have an impact on our ability to fight infection, or at least cope better with the illness that winter brings.

### Nutrition

It is known that malnourished individuals are at higher risk of infectious disease due to an inadequate immune response. Infection then leads to inflammation and worsening nutritional status which further compromises the immune system.

An adequate diet helps maintain immunity and keeps you healthy. The immune system needs such nutrients as protein, fatty acids, vitamins, and minerals. Severely malnourished people are particularly vulnerable to immune dysfunction, and they get sick more easily than other people and stay sick longer.

### Smoking

It is no surprise that smokers tend to suffer from colds and flu. Part of the reason smokers are at risk for lung cancer and respiratory diseases may be that smoking suppresses immune



cells. Smoking also robs the body of important nutrients leaving insufficient reserves. Most notable is vitamin C, which acts as an antioxidant and is immune function-boosting. Vitamin C strengthens the immune system by increasing the production of T and B-Lymphocytes, and other white blood cells.

(Continued on page 4)

# Meningococcal Disease

Suzanne Keen

Meningococcal disease is a severe infection that occurs when the meningococcal germ 'invades' the body.

Five serogroups of meningococcal bacteria (A, B, C, Y and W135) are responsible for the majority of meningococcal disease worldwide. The most important groups in Australia are groups B and C, which are responsible for over 90% of meningococcal disease.

Between 5-11% of adults and up to 25% of teenagers carry the bacteria in the nose and throat and are likely to be the main source of transmission to younger age groups.

Although most people who 'carry' this germ remain quite well and do not develop meningococcal disease, it does occur in people who have recently (within the previous seven days) acquired the germ from a healthy 'carrier'.

Although the germ is spread in droplets that are shed from the throat or nose, the germ does not live for long outside the body. Close and prolonged contact with a carrier is usually required for the germ to spread to other people. Young children under five years of age and young adults (15-24 years of age) are at higher risk, and there is usually a seasonal increase in the winter to early spring months. Despite being hard to catch and relatively uncommon, the disease can be fatal, and outbreaks can occur.

There are two main forms of meningococcal disease and it can occur as a combination of these two forms. Meningococcal Septicaemia occurs when the germ invades the bloodstream and causes blood poisoning, and Meningococcal Meningitis occurs when the germ infects the outer lining around the brain and spinal cord.

The table below indicates the typical symptoms for Meningococcal Septicaemia and Meningococcal Meningitis. However it must be noted that not all these symptoms may show at once.

Meningococcal Septicaemia	Meningococcal Meningitis
<ul style="list-style-type: none"> <li>- Patient obviously very ill</li> <li>- Fever</li> <li>- Marked muscle and joint pains</li> <li>- Often a rash starting as tiny red or purple spots but they soon spread and enlarge to look like fresh bruises and the rash usually does not fade when pressure is applied to it.</li> </ul>	<ul style="list-style-type: none"> <li>- Fever</li> <li>- Stiff neck</li> <li>- Severe headache</li> <li>- Dislike of bright lights</li> <li>- Vomiting</li> <li>- Muscle and joint pain</li> <li>- Drowsiness</li> <li>- Possibly rash as described for Meningococcal Septicaemia</li> </ul> <p><b>In young babies symptoms may be characterised by:</b></p> <ul style="list-style-type: none"> <li>- Refusing feeds</li> <li>- Vomiting</li> <li>- High pitched moaning cry</li> <li>- Irritability</li> <li>- Dislike of being handled</li> <li>- Blank staring expression</li> <li>- Lethargy and drowsiness</li> <li>- Pale blotchy complexion</li> </ul>



A vaccine is available to protect against the meningococcal C disease, which makes up about one third of all meningococcal disease in Australia. The vaccine only protects against meningococcal C disease and from 12 months of age a single vaccination provides long-term immunity. In Australia the disease is uncommon in children under 12 months of age and as such, the meningococcal C conjugate vaccine is offered free at 12 months of age as part of the National Immunisation Program - South Australia. The Australian Government has provided free meningococcal C vaccine for a catch-up program to vaccinate all children and adolescents born 1984 - 2001 inclusive. The program concludes in 2006. For those not

eligible for free vaccine, the vaccine is available at a cost from some councils or via prescription from general practitioners.

Most common adverse events of this vaccine include pain, redness or swelling at the injection site, headache, mild temperature, dizziness, nausea and/or rash. Rare adverse events include convulsions, anaphylaxis and purpura. Although there is no possibility that the vaccine causes meningitis, symptoms of meningism, such as neck pain and/or stiffness or photophobia, have been reported.

Administration of the vaccine should be postponed if the child/person is unwell or has a fever (over 38.5 degrees), for pregnant women

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# Immunisation Myths and Realities

Suzanne Keen



Arguments against immunisation are generally based on a rejection of evidence supporting immunisation or are based on alternative views of health and health care.

The following immunisation myths and their responses are taken from *Immunisation Myths and Realities – Responding to Arguments against Immunisation. A Guide for Providers*, 3rd Edition, Commonwealth Department of Health and Ageing.

## Myth 1—Vaccines suppress the immune system

It is sometime argued that vaccines suppress, rather than enhance, the immune system. The only situation where this may occur appears to be immune suppression following the use of high-titre measles vaccines, which were proposed at one time as the preferred vaccines for some developing countries. As a consequence, these vaccines are no longer used. They have never been used in developed countries, such as Australia. There is no evidence of this effect with other vaccines.

## Myth 2—Vaccines are unsafe

A major concern of opponents of immunisation is that they consider vaccines cause harm, whether or not they prevent the disease. In general, no biological product can be considered 100% safe. However, all vaccines available in Australia are required to pass stringent quality, safety and efficacy requirements before approval by the Australian Therapeutic Goods Administration.

## Myth 3—Immunisation is unnatural

Immunisation is said to be an artificial stimulus to the immune system, which is somehow harmful. A variant of this view is that the injection of vaccines is unnatural and that the natural portal of entry is usually via the respiratory or some other route. The ‘large’ dose of antigen directly injected then supposedly overwhelms the child’s natural responses. Vaccines provide the same stimulus to the immune system as infection, but without disease. In this sense immunisation is natural, and few drugs interact

with the body in such a natural way as vaccines. Children are continually challenged with a large number of agents of communicable disease in the first few years of life (including, in the absence of immunisation, the vaccine preventable diseases).

## Myth 4—Infectious diseases are not serious and are a normal part of growing up

Parents may believe that vaccine preventable diseases of childhood do not cause serious illness and are a normal part of the child’s growth. From 1989-1998 there were 581 recorded deaths in Australia from diseases preventable by vaccines on the childhood immunisation schedule: 440 from hepatitis B, 88 from haemophilus influenzae type b, 1 death from diphtheria, 19 from measles, 14 from pertussis, 3 from mumps, and 16 from tetanus.

For information, see Immunise Australia at [www.immunise.health.gov.au](http://www.immunise.health.gov.au) or Immunisation Infoline 1800 671 811. ■

*(Meningococcal disease: cont. from page 7)* unless otherwise indicated, or if the person has previously been vaccinated with polysaccharide vaccine (Mencevax or Menomune).

If this is the case, delay the conjugate vaccine (in SA Neisvac C or Meningetec) for a minimum interval of six months.

The meningococcal C vaccine does not protect against other strains, including meningococcal B disease, that are responsible for the majority of cases of the disease in Australia. A potential new Meningococcal B vaccine is currently being trialled at the Adelaide Women’s and Children’s Hospital. This will be the first time the vaccine will be

administered to humans. Other countries are in the process of trialling similarly. However, at this stage there is no broad-spectrum vaccine against meningococcal B disease.

As meningococcal C vaccine is recommended on the Schedule at 12 months of age, providers can receive a \$6.00 notification payment if ACIR is notified, and is paid when children at 12 months of age have received all vaccinations due at 12 months.

In summary, meningococcal disease is a bacterial infection that can cause life-threatening conditions, including meningitis, septicaemia and other rare conditions. A

conjugate vaccine for protection against meningococcal C is available and recommended on the Schedule at 12 months of age. It is still important for the community to remain vigilant and alert for signs of meningococcal disease caused by other serogroups.

Further information available from:

- Divisions of General Practice (local immunisation coordinators)
- NHMRC Aust. Immunisation Handbook, 8<sup>th</sup> Edition
- Immunise Australia website at [www.immunise.health.gov.au](http://www.immunise.health.gov.au)
- SA Immunisation Coordination Unit at [www.dh.sa.gov.au/pehs/immunisation-index.htm](http://www.dh.sa.gov.au/pehs/immunisation-index.htm) or telephone (08) 8226 7177. ■

# Recent developments in communicable disease research

Janet Devlin

## Bird flu is one of many pandemic threats

Anna Salleh, *ABC Science Online*,  
Thursday, 27 April 2006

Birds are not the only source of viruses that could become the next flu pandemic, Dr Mark Gibbs (ANU) and retired virologist Professor Adrian Gibbs report in *Nature*.

Dr Jeffrey Taubenberger and colleagues previously reported in *Nature* that the Spanish flu virus was a bird virus that leapt the species barrier into humans and that RNA material from the 1918 virus showed similarity to bird viruses, including the deadly H5N1 strain. Taubenberger said this was supported by family trees constructed by comparing 1918 virus genes with those from a range found in other animals. He argues the 1918 virus came directly from birds without combining with viruses in other animals first.

Gibbs disagrees, saying the family trees show the 1918 virus evolved from a virus that had been in mammals for some time. He says different family trees support the idea the 1918 virus was a result of virus recombination in animals like pigs, horses or cats. He says the virus may have been in humans 50 or 60 years before the pandemic as some elderly people had immunity to the 1918 flu. He suggests the coincidence between the 1918 and bird flu viruses Taubenberger found were evidence of parallel evolution. He says the notion that the influenza threat is only from birds is wrong and there is a reasonable chance the next pandemic may come from a virus already in people, pigs or other mammal.

See also:

- Bird flu splits into two strains, *News in Science* 21 Mar 2006
- Bird flu myths & facts, *Health Matters ABC Health Online* 23 Feb 2006
- Killer Spanish flu looks like bird flu, *News in Science* 6 Oct 2005
- *BMJ* 2006; 332:1094 (6 May), doi: 10.1136/bmj.332.7549.1094-b

## Could epidemic chlamydia contribute to rise in preterm births?

Woody Caan, *Professor of Public Health, Anglia Ruskin University, Chelmsford CM1 1SQ, a.w.caan@anglia.ac.uk*

A rise in preterm births in Denmark should alert those in other countries to the potential risk factor of chlamydia infection. Rates are rising rapidly among young women in urban UK, most affected patients are unaware of their infection and specialist screening and treatment facilities are not easily accessible for most populations. He suggests this could be the 'invisible' factor driving higher rates of premature babies among otherwise 'low risk' mothers.

- Langhoff-Roos J, Kesmodel U, Jacobsson B, Rasmussen S, Vogel I. Spontaneous preterm delivery in primiparous women at low risk in Denmark: population based study. *BMJ* 2006; 332: 937-9.
- Caan W. Implications for the economic evaluation of other screening programmes e.g. for chlamydia [electronic response to Kiss et al. Prospective randomised controlled trial of an infection screening programme to reduce the rate of preterm delivery]. <http://bmj.bmjournals.com/cgi/eletters/329/7462/371#69924> (5 August 2004)
- Jens Langhoff-Roos, Ulrik Kesmodel, Bo Jacobsson, Steen Rasmussen, and Ida Vogel. Spontaneous preterm delivery in primiparous women at low risk in Denmark: population based study *BMJ* 2006 332: 937-939.

## Mumps and air travel

*MMWR*. 2006;55(14):401-402. ©2006 Centers for Disease Control and Prevention (CDC)

A mumps outbreak in Iowa (US) since December 2005 has spread to six neighbouring states. An acute viral infection characterized by a nonspecific prodrome, mumps transmission occurs by direct contact with respiratory droplets or saliva. Incubation is 14-18 days (range: 14-

25 days) from exposure to symptom onset and infectious period is from three days before and nine days after symptom onset. The recent outbreak has occurred despite decreasing incidence in the US since routine vaccination of children in 1977 and a further decrease in the 1990s (thought to be attributable to the implementation of the second dose of measles, mumps, and rubella vaccine). The outbreak appears to be linked to two individuals who used nine different commercial flights on two airlines between March and April 2006.

The CDC recommends health-care providers remain vigilant for mumps among persons with parotitis or other salivary gland inflammation within 21 days of travel and suspect cases reported immediately to public health officials.

- Reported by: P Quinlisk, MD, Iowa Dept of Public Health, S Redd, G Dayan, MD, National Center for Immunization and Respiratory Diseases; N Gallagher, Geographic Medicine and Health Promotion Br, P Lutz, K Marienau, MD, F Averhoff, MD, Quarantine and Border Health Svcs Br, Div of Global Migration and Quarantine, National Center for Infectious Diseases, CDC.

## Positive results reported for flu vaccine trial

John G. Bartlett, MD *Medscape Infectious Diseases*. 2006;8(1) ©2006 Medscape

A new version nasal spray influenza vaccine (CAIV-T) may be more effective than traditional injected flu vaccine in young children. The new vaccine was 44% more effective in preventing illness caused by influenza in children six months to five years old. CAIV-T only needs refrigeration and is easier to handle than frozen vaccine.

- Reuters Health Information, CHICAGO May 01 2006

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(Recent developments: cont. from page 9)

### **Genital herpes under-reported among African American men**

*J Infect Dis* 2006; 193:905-911.

Dr Sizemore and colleagues, University of Tennessee, tested 516 heterosexual, predominantly African-American men (90%), attending an STD clinic. More than half the men had antibodies to herpes simplex virus (HSV) type 1 and the study suggested that infection is common, mostly unrecognised and that asymptomatic viral shedding was present in a substantial portion of the sample. Factors associated with HSV-2 infection included older age and African American race. Overall, the research group concluded that genital HSV-1 infections might be more common than has previously been appreciated.

- Reuters Health Information, NEW YORK May 01 2006

### **Antimicrobial urinary catheters**

A review of antimicrobial urinary catheters for preventing catheter-associated UTIs studies found that catheters can prevent or delay the onset of catheter-associated bacteriuria in selected hospital patients, but the effect varies substantially according to publication year and other variables. The effect

on morbidity, including bacteremia and the clinical and economic value of the technology, were not well demonstrated.

- Johnson JR, Kuskowski MA, Wilt TJ. Systematic Review: Antimicrobial urinary catheters to prevent catheter-associated urinary tract infection in hospitalized patients. *Ann Intern Med.* 2006; 144:116-126.

### **MRSA nasal colonisation rates**

The National Center for Infectious Diseases (CDC) reviewed rates of nasal colonization by methicillin-resistant *Staphylococcus aureus* (MRSA) in a population-based cohort between 2001-2002 in US. Rates of colonization were relatively low with a particularly low rate of MRSA USA300 strains.

- Kuehnert MJ, Kruszon-Moran D, Hill HA, et al. Prevalence of *Staphylococcus aureus* nasal colonization in the United States, 2001-2002. *J Infect Dis.* 2006; 193:172-179.

### **Epidemiology of pneumococcal disease in older adults**

Past US Centers for Disease Control and Prevention (CDC) studies showed the benefit of vaccinating children with the protein-polysaccharide conjugate vaccine in reducing rates of invasive pneumococcal disease in adults, particularly among those of parental age. A more recent study by The Active Bacterial Core Surveillance

Network monitoring invasive pneumococcal disease among a large population (approx 18,800) showed benefits in a much broader group, with substantially decreased rates in the over 50s. The 7-valent paediatric vaccine is believed responsible since the disease caused by the serotypes in the vaccine is reduced, with no decrease in rates of invasive disease due to other serotypes. These reports highlight the important role of young children as vectors of *S pneumoniae*.

- Lexau CA, Lynfield R, Danila R, et al. Changing epidemiology of invasive pneumococcal disease among older adults in the era of paediatric pneumococcal conjugate vaccine. *JAMA.* 2005; 294:2043-2051.

### **Massey Lectures 2005: Race Against Time**

*Stephen Lewis*

A five-part presentation on the impact of AIDS in Africa 'a searing insider's perspective on our ongoing failure to help'. Lewis is the UN Secretary-General's special envoy for HIV/AIDS in Africa, a commissioner of the World Health Organization's Commission on Social Determinants of Health, and director of the Stephen Lewis Foundation.

- Transcripts and audio copies at Canadian Broadcasting Corporation website.

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# Psychosocial Aspects of Pandemic Disease

Janet Devlin

## *To perceive is to suffer*

Aristotle – Greek Critic, Philosopher,  
Physicist and Zoologist (384–322 BC)

Infectious disease is the number one killer of humans worldwide.

Tuberculosis killed more than two million (of 8.8million infected) in 2003 and malaria causes more than a million deaths (of 5 billion clinical episodes) each year. More than 39 million people live with HIV at present. The cumulative number of deaths from AIDS as of 2004 was more than 25 million. However, influenza is the leader in terms of mortality, with 1-1.5 million dying from the illness or its complications per annum (Osterholm, 2005).

It has variously been suggested that a pandemic caused by the H5N1 influenza strain could infect up to 40% of the world's population (Garrett, 2005), with similar effects to the 1918 pandemic and triggering 'a reaction that would change the world overnight' (Osterholm, 2005, p26). Osterholm (2005) further suggests that despite the dramatic impact of HIV, malaria and TB on the developing world they have not brought global, regional and national economies to a halt in the manner envisaged by some should an avian flu pandemic occur.

## *No passion so effectually robs the mind of all its powers of acting and reasoning as fear*

Edmund Burke (1756) A Philosophical Inquiry into the Origins of Our Ideas of The Sublime and Beautiful (1729-1797)

In the context of such information, especially when the public fear of contagion is exacerbated by sensationalist and inaccurate media reports (Smith, Veenhuis and MacCormack, 2000) it is surprising that so little attention has yet been paid in the literature to the psychosocial ramifications of a flu pandemic in terms of either anticipatory anxiety and the likelihood that same would increase markedly the closer to home a case occurs (Smith, 2006), or the consequences of a pandemic for mental health services during and after a pandemic. Understandably, comprehensive plans for dealing with medical aspects of a pandemic, including prevention, have been widely developed, from community health centres to regional, state and national health services. However, a brief examination of the literature and major websites reveals little in the way of a systematic approach to specific needs that may accrue to a flu pandemic and its concomitants. Rather, there seems to be a reliance upon literature pertaining to natural and other disasters that are qualitatively different, with perhaps less ongoing or long term deleterious mental health sequelae.

The knowledge gained from the experience of terrorism and disasters such as the recent Asian Tsunami is invaluable in informing preparation for the mental health impact of a flu pandemic. There are information sheets and guidelines published by such organizations as the CDC (2006), The American Psychiatric Association (2006) and The American Psychological Association.

Among the few papers addressing the impact of increased demand for mental health services is a non-clinical paper focussing on the economic impact of a flu pandemic

by Smith (2006). He explores lessons learned from SARS and emphasises the role that perception of risk and potential for serious morbidity or mortality has upon the emotional state of the population.

Stein, Tanielian, Eisenman, Keyser, Burnham and Pincus, 2004 note that infectious disease outbreaks can have 'serious and extensive psychological, economic and political consequences' (cited in Smith, 2006). Smith (2006) suggests that fear and anxiety associated with a pandemic will not only affect how people engage socially and economically but are likely to result in a large number of 'worried well' (p7), those with no prior mental health pathology, and that this could overwhelm health systems. He cites Warwick's (2001) data demonstrating that for every physical casualty there may be five psychological casualties. The practice and policy implications of such data should be clear and, as Smith (2006) suggests, quantifying the behavioural changes that might be expected would significantly help both epidemiological and economic planning.

For example, during the SARS outbreak 3% and 42% of Singapore residents reported high and moderate levels of anxiety, respectively; 13% of Hong Kong residents were quite or very anxious; and in Toronto, substantial emotional difficulty was associated with the need for confinement. Indeed, the medical profession reported much greater anxiety and fear levels than the general population (Smith, 2006).

The work of such authors strongly suggests the need for carefully thought out health promotion and communication strategies in preventing and managing the level of anticipatory distress in a population

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# Psychosocial Aspects of Pandemic Disease

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with respect to pandemic flu. The same principles can serve to minimise the emotional fall-out should a pandemic occur.

Mental health has been described as: 'the state of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and cope with adversity' (European Commission, 2004)

Smith et al (2000) advocate three major roles for mental health service providers in mitigating the potential for generalised anxiety, acute stress and post traumatic stress and related disorders in relation to bioterrorism:

- primary prevention
- emergency response, and
- psychosocial aftermath.

It is suggested that this might equally apply to population mental health needs associated with pandemic flu

but requires a systematic policy and practice framework to guide best practice intervention to enable individuals to enjoy optimal mental health (as defined above) and to offset the potential for the deleterious socio-economic consequences that might otherwise result.

## Literature cited

European Commission. (2004). Mental Health, European Centre for Disease Prevention and Control, European Commission, 2004.

Garrett, L. (2005). The Next Pandemic? Foreign Affairs, 84 (4), July/August: 3-23.

Osterholm, M.T. (2005). Preparing For The Next Pandemic. Foreign Affairs, 84 (4), July/August: 24-37.

Smith, C.G., Veenhuis, P.E. & MacCormack, J.N. (2000). Bioterrorism: A New Threat with Psychological and Social Sequelae. North Carolina Medical Journal, 61 (3), May/June: 150-165.

Smith, R.D. (2006) Infectious Disease and Risk: Lessons from SARS. Risk Case Studies, The Nuffield Trust Global Programme on Health, Foreign Policy and Security, UK Global Health Programme.

Stein, B.D., Tanielian, T.L., Eisenman, D.P., Keyser, D.J., Burnham, M.A. and Pincus, H.A. (2004). Emotional and Behavioural Consequences of Bioterrorism: Planning a Public Health Response. The Milbank Quarterly, 82.

Warwick, M.C. (2001). Psychological Effects of Weapons of Mass Destruction. The Beacon, National Domestic Preparedness Office Newsletter, 3.

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