

Melbourne 2006: setting the standard for future Commonwealth Games

Mark Stuart, Bill Horsfall and Mel Blachford describe how pharmacy services were organised during the recent Commonwealth Games that took place in Melbourne, Australia

The pharmacy within the polyclinic of the athletes' village at the recent Melbourne Commonwealth Games was a showcase of modern Australian pharmacy practice. Twenty volunteer pharmacists from Victoria and other Australian states served a record 4,500 athletes and 1,500 team officials who converged on Melbourne for the 12 days of competition.

The pharmacy was located at the entrance to the purpose-built medical centre where all medical disciplines were represented. The close proximity and frequent communication between specialist sports medicine, physiotherapy, podiatry, optometry, medical imaging and dentistry services meant that athletes received concentrated treatment from a highly specialised multidisciplinary team in a single visit to the polyclinic. This environment, unique to a games setting, allowed pharmacists actively to contribute clinical and pharmacological information as part of the "front line" care for athletes and team officials.

The pharmacy was one of the best equipped in games history. Since it was purpose-built, features to optimise patient communication, including two counselling areas, were an integral part of the planning. The pharmacy had three computer terminals and a state-of-the-art barcode scanning system to reduce any possibility of a dispensing error. After an item was dispensed and labelled, the pharmacist would scan the product with a laser scanner. This would then check that the drug booked out from the dispensing system matched the product that had just been issued. Since July 2004, this electronic scanning equipment has become compulsory by law in the Australian state of Victoria.

Unlike Olympic Games, Commonwealth Games integrate events for athletes with a disability into the main competition schedule — this was first introduced for the Manchester Games in 2002. The design of the



Pharmacists, behind the counter, Nellie Procopiou, Bill Horsfall and Mark Stuart talk to athletes in the Melbourne Games polyclinic pharmacy

polyclinic pharmacy meant that athletes in wheelchairs had an easily accessible area with counselling benches at the optimum size and height to enable them to receive equal, personalised and confidential counselling.

Dispensing systems

A modified dispensing program and hardware were developed by PCA NU Systems. Modifications to the WiniFred dispensing system included removing fields that would normally be used for drug costing or claim purposes, adding fields to record the athlete's and prescriber's unique games accreditation number, and adding a drop down list of all Commonwealth countries, to be selected for each patient. Since all the athletes resided in the athletes' village, the name of their country was sufficient to locate the athlete if any later communication was necessary. Additionally, each prohibited or restricted medicine was tagged with a clear alert message that would appear at the time of dispensing.

To compliment the verbal counselling provided by the games pharmacists, the dispensing system was linked to various electronic resources to provide printed consumer medicines information about every drug dispensed. In addition, information about the patient's medical condition was also given

where possible and self care health information cards on various diseases, supplied by the Pharmaceutical Society of Australia, were given to athletes during each personal consultation with the pharmacist.

Similarly to previous international games, a unique prescription format was developed. At the time of prescribing, the athletes' and prescribers' country and games accreditation number would be documented on the prescription. If a restricted or permitted drug was prescribed, the prescription required further signatures of the doctor, pharmacist and athlete. This was to confirm that the athlete was aware of the status of the drug and of any therapeutic use exemption (TUE) forms that were required to be submitted to the Commonwealth Games Federation TUE Committee before the athlete started the treatment. Examples of drugs requiring special exemptions to be used therapeutically include inhaled, intravenous or intra-articular corticosteroids and inhaled beta₂-agonists such as salbutamol. To ensure that the use of medicines issued to athletes complied with the World Anti-doping Code, all medicines, including OTC products, were supplied only on prescription. This ensured that thorough checks against the prohibited list were undertaken for every medicine issued and that a comprehensive patient history was retained.

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Similarly to the Sydney 2000 Olympic Games, visiting team doctors were given prescribing rights for the duration of the games. They were able to prescribe only for athletes and officials from their own country. This practical arrangement was different from that at the 2002 Manchester Games, where only UK-registered doctors could authorise prescriptions within the polyclinic. Pharmacists from other Australian states were given free temporary registration by the Pharmacy Board of Victoria to enable them to practise at the polyclinic for the duration of the games. This registration process was made possible by the Victorian Government's Special Events legislation.

Specific formulary

A specific formulary was developed in collaboration with MIMS Australia for use within the polyclinic. It contained a comprehensive range of medicines, including many specifically to treat sports injuries, including topical and oral non-steroidal anti-inflammatory drugs, injectable corticosteroids and topical preparations for sprains, strains and bruising. It also contained information about the status of each drug in sport and information for local and international doctors about the unique prescribing process within the polyclinic.

The Melbourne 2006 formulary contained more comprehensive prescribing advice than those of previous Olympic and Commonwealth games. Unlike previous formularies, it also provided detailed information about contraindications, precautions, adverse reactions and interactions. In addition, all visiting team doctors and the polyclinic pharmacy received a copy of *MIMS Bi-monthly*, donated by MIMS Australia.

Providing medicines information to athletes and to both local and visiting international health care professionals was a key role for this Commonwealth Games pharmacy. A comprehensive range of information sources enabled pharmacists to search local and international references quickly. The Pharmaceutical Press donated access to the online 'MedicinesComplete' for the duration of the games, which enabled access to references including 'Martindale', the British National Formulary, Stockley's 'Drug interactions', 'Dietary supplements' and 'Herbal medicines'. 'MedicinesComplete' was frequently used to identify foreign drug preparations that athletes were already taking and to find local Australian equivalents. Other reference books available to pharmacists included 'Australian therapeutic guidelines', 'Australian medicines handbook', 'Merck manual' and the Australian Pharmaceutical Formulary, donated by the Victorian Pharmacy Guild.

All drugs in the polyclinic pharmacy were supplied free of charge to all athletes and officials. The pharmacy was supplied by Australian Pharmaceutical Industry (API) wholesalers, which delivered one order daily. The pharmacy team also facilitated the supply of bulk medicines for use by some of the larger teams including England, Canada and

Scotland, which had their own independent medical facilities onsite in the village. A direct ordering route was established between them and API, and these orders were delivered via the polyclinic pharmacy. This is the first time such an arrangement for visiting teams has been in place for a Commonwealth Games. The pharmacy also facilitated the supply of medicines to other venues for sports including swimming, athletics and cycling.

Links with the pharmacy department at the Royal Melbourne Hospital and a local community pharmacy were established before the games. During games time, additional urgent medicines could be obtained from these places at short notice and after hours.

With some of the pharmacists having also worked at the Sydney and Manchester games, this event provided an opportunity to follow up on the medical services of these previous games. After Manchester, the reference books were donated for use at the 2003 All Africa Games in Nigeria, and some pharmacy equipment was donated for use at the 2003 South Pacific Games in Fiji. Team officials from both countries reported to the Melbourne polyclinic that these were a welcomed and much used resource at these huge events.

The unique games environment provided pharmacists with a constant supply of challenges not usually encountered in normal practice. Knowledge of the anti-doping code, musculoskeletal medicine and tropical and contagious diseases was often put to the test.

The polyclinic had two admissions for patients with malaria who required drug treatment, one of which required their existing malaria medication to be identified and re-supplied. There was also a case of chickenpox in one of the hockey players from a visiting team — the pharmacy obtained urgent supplies of varicella vaccine for use by some of the other players in the team. Maintaining the cold delivery chain for this live vaccine during a 40C heatwave in Melbourne was another logistical challenge for the pharmacists.

"Fireworks eye"

The evocative and quirky opening ceremony to the games culminated in a spectacular fireworks display inside the Melbourne stadium, watched by the athletes from within the centre arena after marching in. Considerable smoke and flying ash from the display resulted in a number of admissions to the polyclinic straight after the ceremony and the next morning. Dubbed "fireworks eye" by the polyclinic pharmacists, some 15 prescriptions for lubricant or anti-inflammatory eye drops were dispensed for athletes with irritated eyes immediately after the ceremony. The volume of prescriptions for eye injuries also rose dra-

matically following the boxing events where a number of athletes were treated for injuries.

Similarly to the Sydney Olympic Games, allergies and insect bites were one of the most common presenting conditions. A number of athletes were bitten by insects, including mosquitoes, with one experiencing severe symptoms requiring administration of an intravenous corticosteroid that needed a TUE. A few days of extreme heat early in the games seemed to exacerbate the incidence of sunburn, itchy skin rashes and dehydration.

Around 150 prescriptions were dispensed daily. The numbers of prescriptions peaked at 194 the day before the opening ceremony and slowly reduced as the games progressed. Compared with the Manchester games, which had a similar number of competitors, the average number of prescriptions was around 50 per cent higher. By observation, this seemed to be due to environmental influences such as a warmer climate, and the presence of insects and local flora causing a greater incidence of allergic reactions.

Injuries

Prescriptions for sports-related injuries accounted for the greatest proportion of dispensed medicines. Topical diclofenac gel was the most dispensed item, with nearly 200 tubes dispensed over the games period. Oral diclofenac and paracetamol were also among the fastest movers. Anti-allergy preparations including loratadine and oxymetazoline nasal sprays were the second- and third-most popular drugs dispensed, closely followed by preparations for cough and colds. A number of pregnancy tests were also dispensed.

To assist doctors in prescribing treatments for cough and colds, standard drug protocols were developed for different sets of cough and cold symptoms. Doctors were able quickly to select a protocol that best matched the patient's condition. Criteria for selection of these protocols depended on variables including no CNS stimulation, dry or productive cough, and the presence of pseudoephedrine or phenylephrine. Doctors would simply prescribe "standard cold treatment X" and pharmacists would then dispense the product combination and provide the necessary counselling to the patient.

VIP visits

One of the highlights for the games pharmacists was royal visits to the polyclinic by the Queen, Prince Philip and Prince Edward. They observed the routine running of the polyclinic and greeted the pharmacists on duty before having lunch with athletes in the huge village dining hall. The prime minister of Australia, John Howard, Victorian premier Steve Bracks, and the Governor General of Australia, Michael Jeffrey, also visited the polyclinic and observed the running of the pharmacy.

The Melbourne games pharmacy has set a new standard of excellence for pharmacy at future games.

Further information

For further information about pharmacy at previous Commonwealth and Olympic games visit www.sportpharmacy.com