

Ensuring that Australian medical graduates can prescribe safely and effectively

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(Introduced by Simon Potocnik)

Prescribing medications is a critical part of medical practice, which frequently begins on the first day of internship. Medical graduates must be able to prescribe safely and effectively. Failure to do so carries significant health and economic consequences. In Australia (Hilmer *et al.*, 2009), as in many other countries, it has been shown that most medical graduates cannot carry out rational prescribing and believe that they need more training in pharmacology.

Many efforts to improve prescribing by medical graduates nationally and internationally centre on developing standards and core curricula. In Australia, ASCEPT recently developed standards for the essential basic and clinical pharmacology knowledge, skills and attitudes that all medical graduates require to be fit to prescribe safely and effectively by graduation. NPS is currently facilitating a project to develop a prescribing competencies framework. Similar work has been performed internationally in the UK, Europe, the USA, and recently by the International Union of Basic and Clinical Pharmacology (IUPHAR).

Training medical students in pharmacotherapy has been shown to improve prescribing, although few studies have evaluated performance much beyond the training period. A wide range of teaching methods have been evaluated, with little head to head comparison. In Australian medical schools, pharmacology teaching includes lectures, problem based learning, use of student formularies, pharmaco-therapeutic tutorials, inter-professional learning tutorials involving medical and pharmacy students, ward rounds with pharmacists and/or use of electronic resources. NPS has developed an on-line National Prescribing Curriculum, a series of case-based modules for new prescribers designed to encourage confident and rational prescribing, and recently launched a National Inpatient Medication Chart online training course for medical students and graduates. Pharmacology teaching materials can be shared internationally through the IUPHAR education section shared teaching resources website (http://www.iuphar.org/sections/teaching/t_resources_m.html).

Educational efforts to improve prescribing cannot be limited to medical students. With increasingly complex new drug regimens for increasingly complex and vulnerable patients, medical graduates at all levels of experience may benefit from ongoing education in clinical pharmacology and therapeutics. Locally, we demonstrated deficits in knowledge of clinical pharmacology of opioids in doctors at all levels of experience (Murnion *et al.*, 2010), and have shown that junior medical officers benefit from and appreciate small group case based teaching about prescribing on the ward. Prescribers from other health care disciplines also require training, and the NPS competencies aim to be multidisciplinary. Educating consumers about drugs they are prescribed also plays a role in achieving quality use of medicines.

In Australia, recent steps to define the knowledge, skills and attitudes required for safe and effective prescribing, coupled with a wide range of teaching techniques, should improve prescribing by medical graduates. While education and training should reduce the risk of medication errors and adverse drug events, it is important that we also address other major risk factors in our healthcare system.

Hilmer SN, Seale JP, Le Couteur DG, Crampton R, Liddle C (2009) Do medical courses adequately prepare interns for safe and effective prescribing in New South Wales public hospitals? *Internal Medicine Journal* **39**(7): 428-434.

Murnion BP, Gnjjidic D, Hilmer SN (2010) Prescription and administration of opioids to hospital inpatients, and barriers to effective use. *Pain Medicine* **11**(1):58-66.