A prescription for better prescribing

Many medical students are unprepared for skilled prescribing

This article originally appeared in *studentBMJ* 2006;14:313.

It's that time of year again. The new junior members of staff have arrived and the old anxiety emerges—are they well trained? In particular, are they properly trained in practical drug therapy and prescribing? We believe they may not be.

In July we drew attention, yet again, to what we and many others perceive to be a serious problem in British medicine—poor prescribing.[w1 w2] We emphasised that deficiencies are not confined to the United Kingdom, and three days later the Institute of Medicine in the United States independently expressed similar concerns.[w3] The chairman of the medical academic staff committee of the British Medical Association later concurred,[w4] and the Healthcare Commission urged the NHS to improve prescribing.[w5]

Evidence of poor prescribing in the UK is abundant. Effective treatments, such as angiotensin converting enzyme inhibitors for heart failure[1] and statins for hyperlipidaemia,[2] are often underprescribed. Prescription errors are common,[3] especially when new doctors start work in hospitals.[4] Approximately 6.5% of admissions to hospital are related to adverse drug reactions, with an associated mortality of 0.15%; this costs the NHS £466m (€692m, $881m) annually.[5]

The reasons for these errors are manifold.[3 6] Some relate to system failures. For example, why does every NHS hospital have its own inpatient prescribing sheet? There should be a single nationwide form.

Another fundamental problem is that medical students are not adequately instructed. In 1994, UK medical students received a median 61 hours of teaching related to pharmacology, clinical pharmacology, and therapeutics.[7] Since then the numbers of pharmacologists and clinical pharmacologists in the UK (and thus the amount of teaching) have fallen.[8 9] In contrast, nurses seeking to obtain the Postgraduate Certificate in Prescribing from the University of Liverpool must complete a training course of 162 hours of theory and 90 hours of practice.[w6]

Prescribing is becoming increasingly difficult, and the inherent risks of adverse reactions and interactions have increased. Modern drugs are pharmacologically complex, the population is ageing, and the use of polypharmacy is increasing. The root cause of prescribing errors among final year medical students is the lack of an integrated scientific and clinical knowledge base.[10] Tomorrow's doctors need a firm grounding in the principles of pharmacology and clinical pharmacology, linked to practical therapeutics,[11] so that they can weigh up the potential benefits and harms of treatment; understand the sources of variability in drug response; base prescribing decisions on sound evidence; and monitor drug effects appropriately. The British Pharmacological Society has developed a syllabus to ensure that medical students are adequately trained.[12] It should be adopted by and implemented in all UK medical schools.

But it is not enough to teach prescribing skills—they must also be assessed. Drug therapy cuts across all medical practice, and modern medicines are too potent for the newly qualified graduate to be allowed to prescribe without providing evidence of competence. Students should not be allowed to compensate for poor performance in this high risk activity by good performances in other areas.

The box (see bmj.com) shows our practical prescription to improve prescribing.[13]

Pharmacologists and clinical pharmacologists should be expected to lead the way in providing the necessary teaching and assessments. However, there are too few of them to handle the entire burden. Their clinical colleagues should be encouraged to devote specific sessions to practical drug treatment, not least because other specialists and general practitioners will draw on and provide extra practical experience. Partnerships with other prescribers, such as pharmacists and nurses, might also be useful.

Medical students have expressed their desire for more teaching in practical drug therapy and prescribing.[13 14] They too can play their part by encouraging their medical schools to provide more tuition. Together with Simon Maxwell at the University of Edinburgh, Amy Heaton, a medical student, has prepared a short web based questionnaire that asks medical students how well their course prepares them for prescribing drugs (http://fs12.formsite.com/amyheaton/pharmacologytherapeutics/index.html). We encourage all medical students and doctors in their first foundation year to take a couple of minutes to fill it in. We also challenge all those involved in teaching students and training doctors to implement these proposals. After all, we shall all benefit from better prescribing.

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Competing interests: The authors are members of the British Pharmacological Society, but the views expressed here are not necessarily those of all members of the society.

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doi 10.1136/bmj.38946.491829.BE

Prevention of psychosocial problems in adolescence

Psychosocial stimulation by parents has long term benefits

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Good parenting protects against psychosocial problems in adolescence. In this issue of the *BMJ*, Walker and colleagues present a controlled trial that adds to the growing body of evidence that interventions to stimulate children and expose them to more positive parenting reduce the risks of antisocial behaviour, truancy, pregnancy, substance misuse, delinquency, and emotional and behavioural disorders in adolescence.[1]

Parenting plays a key part in children's emotional and behavioural development. Good parenting helps children adjust to change and adversity and establishes healthy patterns of emotional, social, and cognitive functioning. Harsh, unpredictable parenting that relies on manipulation, threats, punishment, and passivity is strongly associated with antisocial behaviour in children. Children with uncontrolled antisocial behaviour are at markedly increased risk of morbidity during adolescence and beyond. They are more likely to play truant, leave school without qualifications, and offend during adolescence or adulthood and are less likely to form meaningful, lasting relationships.[2]

Most trials of parenting programmes are conducted in research centres, with highly motivated staff and groups of parents who have volunteered to participate. It is heartening to read a "real world" study, which included more than 100 families from deprived areas of Kingston, Jamaica. Walker and colleagues evaluated an intervention that included two years of psychosocial stimulation—a one hour weekly session for mothers and children that taught developmental play (free toys and books were also provided). Weekly stimulatory play resulted in long term improvements in children's cognitive development, enhanced emotional wellbeing, and fewer problems with attention in adolescence.

More than 20 years ago, Patterson showed that parental reactions to antisocial behaviour often perpetuate such behaviour, and that ignoring undesired behaviour stops it.[3] Behaviour based parenting programmes may prevent emotional and behavioural disorders in adolescence. Scott and colleagues' multicentre controlled trial of parenting groups for childhood antisocial behaviour delivered in clinical practice found that such parenting groups reduce serious antisocial behaviour in children.[4]

The group based parenting programme pioneered by Webster-Stratton teaches active listening, child focused play, praise, limit setting (how strict parents should be about enforcing rules), how to offer incentives for good behaviour, and disciplinary methods that help children develop self control.[5] The theoretical basis of the programme is explained to parents. The programme aims to produce sociable and self reliant children.

Conduct disorder in adolescence and juvenile delinquency are important problems, not only for young people and their families, but for society. Adolescents with conduct disorder consume many resources offered by the health, social care, and justice systems. Parenting interventions can have many beneficial effects, such as reducing rates of arrest and time spent in institutions. This may result in cost savings for society.[6]

Walker and colleagues' study is particularly inspiring as their positive parenting intervention was offered before children developed emotional or behavioural difficulties.[1] Because of the worldwide shortage of child psychiatrists, most clinical responses are reactive rather than proactive and preventive. Effective parenting is a powerful protective factor that could mitigate the impact of socioeconomic adversity, low levels of parental education, low birth rate, and other environmental risk factors.

Hoghughi has called for "an urgent shift of emphasis from reactive intervention to prevention and health promotion."[2] Most parents know they have an important role in the emotional and cognitive development of their children, but many of them lack the information and self confidence needed to have a positive influence. Health visitors and other primary care workers are ideally placed to educate and enhance parents' skills. Webster-Stratton suggests that parenting programmes would have a higher impact, be less stigmatising, and be more cost effective if offered as a preventive measure.[7] Offering parenting programmes to parents of all young children would confer a degree of herd immunity against future development of psychosocial problems in adolescence. We have a collective duty to educate, support, and enable all parents to succeed in this vital role.

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doi 10.1136/bmj.38951.482431.BE