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Managing Asthma

CSC use – can it measure need?

Prescribing
Should we manage supply or demand?

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Cover illustration: *Dr Peter Allen of Northland is the first winner of the NZFP photographic competition, with his cleverly posed photo which features on the cover of this issue. More prizes are up for grabs – see page 52 for details.*

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Editorial

To write prescriptions is easy, but to come to an understanding with people is hard

Professor Campbell Murdoch, Editor, MD PhD FRCGP FRNZCGP

The quote is from Kafka's[1] intriguing tale *A Country Doctor*, which is about a night visit to a young patient. His horse has died, but a strange unearthly groom turns up and offers a pair of enormous horses which transport the doctor instantaneously to the bedside. Too late he discovers that the exchange is at the expense of his maidservant Rose. He makes the diagnosis – a worm-filled wound in the right iliac fossa – but has no treatment and is humiliated by the family and the villagers, who strip off his clothes and lay him on the bed beside the patient.

Eventually he escapes but is doomed to ending his return trip naked on the back of one of the now very slow horses, with his clothes in a bundle and his furcoat caught at the back of the gig. According to Felice Aull and Jack Coulehan, 'the story symbolizes the experience of being a healer at any time or place. The sick are needy, vulnerable and sometimes demanding; the physician is only human, can only accomplish so much and is often mistaken.'[2]

Prescribing as it was: An envelope which once contained cocaine, prescribed by Carl Koller, an associate of Sigmund Freud, circa 1883. The prescription is written on the outside of the envelope. Photo courtesy Library of Congress.

The first home visit I ever did in general practice in 1968 was to a lady who had just fallen down the stairs in her house and twisted her ankle. I arrived with my shiny new case, made the appropriate diagnosis and was soon applying a crepe bandage to the accompaniment of a commentary to her husband on the skills of the new doctor. 'Look at how neatly he does it, John. Doctors are not usually so good at doing that sort of thing. Oh that's much better, Doctor.'

They say that flattery gets you everywhere and soon I was eating out of her hand. Seven years of medical education had not prepared me for this. 'While you're here, Doctor, I wonder if you would be so kind as to give me a prescription for a few of the sleeping capsules that Dr Mackay always gives me. It would save John the trouble of going down to the surgery for them.' It was an offer I could not refuse and so the new prescription pad came out and was inscribed with *Caps Tuinal 200mg /Sig 2 nocte / mitte 30 days supply*. I arrived back at base full of the pride of a job well done, only to be met by the senior partner who said that he had omitted to tell me that she was a barbiturate addict and hoped that I had not prescribed for her. It was a first lesson that the sick are needy, vulnerable and sometimes demanding; the physician is only human, can only accomplish so much and is often mistaken.

> I have always been struck by how easy the task of prescribing seems when you take the human dimension out of the equation

Over the ensuing 33 years , I have always been struck by how easy the task of prescribing seems when you take the human dimension out of the equation. There are many who see the work of general practice as simply a question of making the right diagnosis and issuing the correct treatment, but they are usually academics, administrators or politicians.

In the personal care of patients there is this different and additional difficulty which can be observed only after you have been inducted into being 'the doctor'. In the three practices to which I have fulfilled this role, people have arrived in the first days and weeks to test whether 'my pills' can help their acute symptoms and to collect prescriptions for 'their' pills, which have been issued to them since time immemorial and have become part of their physiology.

In Kafka's story the patient and his family were pleased when the doc-

tor made the diagnosis by noticing the wound but the doctor still had to run from the taunts of the community when he could not give a positive answer to the question 'Will you save me?' The doctor expresses frustration which is very like the things you hear from modern general practitioners. 'That is what people are like in my district. Always expecting the impossible from the doctor. They have lost their ancient beliefs; the parson sits at home and unravels his vestments, one after another; but the doctor is supposed to be omnipotent...' The induction process – and I have observed it in Kirkintilloch, Dundee, Dunedin, Al Ain, Ipoh and Winton – involves taking on this mantle of omnipotence and prescribing is a major ritual in the process.

Acute prescribing – the doctors' pills

People still expect the impossible from the doctor and prescribing has to be viewed within the necessary constraints of the current business environment of New Zealand general practice which means that, in order to survive, most of us have to see 30–40 people a day. Many of the people I see acutely have the expectation that I will explain and lose their symptoms – a tall order indeed – but I persist with this conjuring trick. The vast majority have respiratory illness, trauma, symptoms such as pain, dizziness, diarrhoea or dysuria, or skin problems, and they expect me to prescribe. I doubt if many of them would come if I did not prescribe, not just because of the therapeutic power of the drugs I prescribe but also because of the symbolic power of the prescription within the patient-doctor relationship.

Many of the techniques which we practise in acute medicine are relics of the 'apothecary system', although in our desire to become academically and professionally respectable we are in danger of handing this business to the pharmacist and the healthfood shopowners. We stand at the counter of our sick shop[3] and match the patients' symptoms to bottles on the shelves behind us.

We don't talk much about this 'corner dairy' aspect of what we do, but the transaction has some major advantages to doctor and patient, particularly if the doctor is aware of the opportunities afforded by these episodes and their possible pitfalls.

The major advantage to the patient is the fact that they can continue living their lives while the doctor tries to sort things. Prescribing provides what I call 'the hourglass effect' by which a time space is created during which people can improve. This also is combined with the placebo effect where even inert substances can lead to the healing of the patient if they are sold with enough conviction.

However the main opportunity is the development of a confidence within which healing can occur and in my experience the healing opportunities arise almost accidentally as we go about the ordinary tasks of diagnosing and prescribing. The pitfalls exist because we always underestimate the power of the drug doctor and of the active drugs at our disposal, many of which we use as placebo.

> The escalating costs of medical care are often the result of a generation of doctors who are so worried about being wrong that they order more and more tests and refer more to specialists

As I pointed out some years ago[4] antibiotics are the placebo we prescribe most often and this is reflected in the article in this issue by Hall and Martin. Still the most difficult thing to do is to explain that it is likely to be a viral infection and that antibiotics will be of no value.

Hart claims that 'the doctor's sick shop, relying on episodic presentation of symptomatic illness, is inadequate for conservation of community health or the effective application of medical science', but I am not so sure. Acute illness is still a powerful driver of help-seeking behaviour and the escalating costs of medical care are often the result of a generation of doctors who are so worried about being wrong that they order more and more tests and refer more to specialists.

What we need is not a change of the setting but awareness in the doctor and a resolve to do the best we can in the circumstances and avoid the worst pitfalls. To wash our hands and insist on evidence-based treatment or nothing is to risk obsolescence because, as Hart himself points out,[5] the advocates of evidence-based medicine 'accept uncritically a desocialised definition of science, assume that major clinical decisions are taken at the level of secondary specialist rather than primary generalist care, and ignore the multiple nature of most clinical problems, as well as the complexity of social problems within which clinical problems arise and have to be solved.'

Long term prescribing – the patients' pills

While we often stress the role of noncompliance, most of the drugs that we start prescribing are continued long after they are needed. Around us at the consultation sit the ghosts of doctors past and we younger doctors suffer by comparison.

A study done long ago[6] demonstrated that long term prescribing increases with the age of the patient and that there are certain drug groups

which once started cannot be stopped without great difficulty. The vast majority of this prescribing is in the treatment of chronic illnesses such as hypertension, ischaemic heart disease and heart failure, but many drugs are continued long past their usefulness and they are also used to treat unhappiness, loneliness and panic.

As Peter Parkinson says in this issue, 'simply calling a feeling an illness does not really solve anything. The robber of health and good feeling (anxiety and panic) multiplies, the potentially lethal drugs for killing the feeling proliferate and dependency on these drugs becomes a risk and a reality. It does keep the consultation brief and may reduce risk. But this is clearly incomplete, so let's try another paradigm.'

The classic description of the repeat prescription by Balint et al[7] was published under the title 'Treatment or Diagnosis?' The understanding given by these early studies was that the repeat prescription was a treaty drawn up between patients and doctors not to bother each other unduly. There are many of our patients who live lives of quiet desperation and I have known those over the years who have asked for what is fashionable through Tuinal, Mandrax, Mogadon, Temazepam and Zopiclone.

Some of us make ourselves feel better by prescribing antidepressants at night. For those who believe that this does not happen now, the study by Pullon et al in this issue shows that 25% of respondents would sometimes provide repeat prescriptions for anxiolytics without seeing the patient and 5% would provide these frequently. In my Dundee study, almost 20% of females aged 65–74 were on long term tranquillisers and 20% were on long-term hypnotics. In the words of the Balint study these prescriptions are 'written in steel and in concrete and are not easily dismantled or remodelled.' We are always asked just for a few more and it always seems easier to comply than to be a policeman or to try another paradigm.

Emphasising the role of healing

The therapeutic ending to Kafka's tale came when the doctor was stripped of his clothes, laid on the bed beside the patient, and the two had a very confidential chat. The patient confessed his lack of confidence in the doctor, 'I have very little confidence in you. Why you were only blown here, you didn't come on your own feet. Instead of helping me, you're cramping me on my death bed. What I'd like to do is to scratch your eyes out.' The doctor responds with 'Right, it is a shame. And yet I am a doctor. What am I to do? Believe me, it is not too easy for me either.'

Earlier the children of the village sang these words to an utterly simple tune: *Strip his clothes off, then he'll heal us, If he doesn't, kill him dead! Only a saw-bones, only a saw-bones*.

Modern medicine seems to be reducing us all to 'saw-bones' – only good when we can do one or perhaps two things well. But people out there want to be healed, and they cannot understand why doctors cannot fulfil this ancient role. In their timely discussion, Dixon et al[8] make the point that patients are looking for physician healers while GPs want to be expert practitioners of modern medicine. The top priorities of patients in primary care is not for newer and more expensive drugs but for doctors who listen and explain clearly, who allow sufficient time for consultation and with whom they are able to get an appointment. Prescribing is only one of the competencies in the armoury of the physician healer, but if it is to be successful in healing it has to be accompanied by communication.

If we were to talk more with mothers about their anxiety during acute childhood illness, perhaps we would prescribe fewer and less potent antibiotics. If we were to individualise evidence by using acute prescribing in N of 1 trials[9] so that therapy was only given to known responders, that might be a start. A recent study[10] has begun to explore ways of seeking concordance with those who are on long term therapy but do not use the treatment as prescribed.

This is not a story with an answer or a happy ending. The doctor returns to his home in despair. As we said, the sick are needy, vulnerable, and sometimes demanding; the physician is only human, can only accomplish so much, and is often mistaken.

General practice is the most difficult area of medicine precisely because it involves dealing with people. Prescribing, while far from easy, cannot be made perfect, but perhaps we could try to make things just a little better by thinking and talking before we write.

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Lessons to be learned from Commissioner's findings

The Health & Disability Commissioner has begun to send the the findings of specific cases to the College of GPs in order to allow an educational opportunity for its members. These cases have been reviewed by Dr Philip Jacobs who is on the Executive of Council and Cathy Webber, Senior Policy Analyst at the College office, and some educational points raised. The commentary presented is a brief summary and some questions are raised for discussion. Further peer discussion around these cases is encouraged and any feedback gratefully received to cw@rnzcgp.org.nz

Case 99HDC13046

This is a case where a GP failed to diagnose a case of haemachromatosis. The man was suffering from vague symptoms of lethargy and anxiety and had arthritic pain. He also had a mild anaemia, abnormal lipids and liver function tests, a high iron saturation, a very high ferritin level and mildly elevated blood sugar. The GP treated the mild anaemia with iron supplements on two separate occasions.

Haemachromatosis is an insidious disease that can present in a number of guises. Its incidence in the general population is much higher than previously thought. The diagnosis must be excluded in all new diabetics and considered in existing ones. Also considered in those with atypical arthritidies or abnormal liver function tests. The treatment by regular venesection at an early stage can prevent diabetes, destructive arthritis, cardiac and liver failure. Genetic studies in family members will pick up those at risk and generate appropriate surveillance with timely treatment.

The Health and Disability Commissioner (H DC) considered:

1 The GP breached right 4(1) and (2) (Right to have services provided with reasonable care and skill and right to have services provided that comply with legal, professional, ethical and other relevant standards) in that the GP did not *manage* the patients abnormal blood test results in an appropriate manner, that is:

- € The protocol of three abnormal blood tests requiring action was unacceptable practice.
- Prescribing iron tablets when the patient had a significantly elevated iron saturation was inappropriate.
- Patient medical record keeping did not meet the requirements laid out by the Medical Council in *Good Medical Practice - a guide for doctors (2000) MCNZ*

4. The GP breached Right 6(1)(f) (Right to information that a reasonable consumer, in that consumer's circumstances would expect to receive, including the results of tests) in that the GP did not adequately follow up the results and did not explain the significance of them to the patient.

The actions resulting from the opinion were:

1 A referral of the matter to the Director of Proceedings.

2 A recommendation to the Medical Council that the GPs competence be reviewed.

3 The GP write an apology to the patient.

4. The GP review their practice to ensure that abnormal blood test results are followed up in a timely and appropriate manner and are properly explained to patients and ensure that test results are accurately and comprehensively recorded in patient notes.

5. The GP amends their record keeping to ensure clear, accurate and contemporaneous records are kept which record the relevant clinical findings, decisions made, information given to patients and any drugs or other treatment provided.

Case 99HDC01756

This is a case where a 32 year old woman died suddenly of a pulmonary embolus. She was on a third generation oral contraceptive (OC) at the time of her death. She had been on the same OC for at least 5 years. She had no obvious risk factors but her father had suffered a myocardial infarction. She was not obese and did not have any history of recent surgery or prolonged travel.

The case against the GP in question was argued on two counts:

1 The practice system of providing repeat prescriptions allowed the

(continued on page 71)

The Hard Sell

Swamprat is intrigued by the current advertising campaign encouraging the middle-aged males of New Zealand to approach their GP and confess that they suffer from limpness of the vital organ. It is said that less than 2% of NZ males are willing to admit this particular weakness and the implication is that NZ GPs are pretty unwilling to raise the topic of the unraised organ in the course of their conversations with the consulting public.

Currently down here in the swamp we are having a great deal of difficulty dealing with the really pressing problems that people come up with like chest pain and asthma and broken limbs and it is sometimes really difficult to get around to questions about impotence. These usually come up at the end of a consult, and if I am feeling particularly PC, I relax back in my chair, assure him he is not the only person with the problem, that I have all the time in the world to compute his International Index of Erectile Function (IIEF) and invite the joker to tell me about what the problem might be and what we can prescribe for him. The evidence is that the advertised treatment works and is safe, but some of the observations in the evidence fascinate me.

The original study by Goldstein[1] (Irwin not Ira) et al, describes the comparison between Sildafenil (Viagra) and placebo in men with erectile difficulties. Placebo in this case is an interesting term as surely the participants would soon know whether they were on the real thing or not. They were given enough pills to see them through for a few weeks and asked not to try more than once a day. Interestingly enough there is no indication in the study that consent was obtained from their partners although each man had to be in a stable relationship with a female partner that had begun at least six months earlier. Of course there were no research assistants in the bedrooms making measurements so the study relied on assessment of efficacy using the responses to questions about frequency of penetration and maintenance of erections after penetration. The results showed that the active and placebo groups were significantly different ($p < 0.001$) but the mean scores for sexual desire were not significantly different in the two groups ($P = 0.13$). However we are told that those on Viagra made 5.9 attempts at sex per month compared to 1.5 on placebo. So if it was that good why did they not try more often? And if, as the advert on TV suggests, men are unwilling to admit their failures in the bedroom, how do we know they didn't make up the scores?

This is a column written from the swamp. The term is taken from the book by Donald Schon[1] where he talks about the crisis of confidence in professional knowledge thus:

In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solutions.

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Contributions

We invite amusing contributions to this column which should be relevant to the swamp and not more than 600 words.

The same statistical results arise when you look at the other big television ads which lead the patients to ask for the treatments they see on television. The $p<0.001$ evidence which leads the adverts to tout Orlistat as a way to lose weight comes up with an average weight loss over 28 weeks of about 3% over placebo.[2] Now for me that would be 3.6kg (big rats here in the swamp) for $160 a week or $1 244.44 per kg. Now this is significant but hardly world shattering. For the enormous people in the adverts it would hardly be a blip on the landscape. The other big advertiser is Flixotide which sends the punters in to get changed from Becotide. The problem the rat has is to decide whether to change them over. Well the evidence is that, if I do, the morning peak expiratory flow rate (PEFR) would improve from 382 litres/minute to 390 which is not even statistically significant.[3] Well this is better control! But by whom?

Direct to consumer advertising is certainly not a new phenomenon and I suspect it is only used when the evidence is extremely weak and when GPs can't be trusted to act wisely on behalf of their patients. When the rat was a Scottish ratling (my cover gets blown all the time!) my patients used to come in on Monday mornings with a cutting from the Sunday Post Doctor. Mandatory reading it was for the discerning GP. The headings were 'Marvellous new pills for Arthritis' and 'No need to suffer piles' or 'The diet that works!' It takes a lot of true humility to admit to your patients that there is something you don't know, and it was no trouble to change them from Brufen to Voltaren, Proctosedyl to Ultraproct or put them on the Scarsdale diet. The adverts are now evidence-based but the problem is that the evidence would never convict anyone. The people who respond to the adverts are a serious lot and they don't usually want a lecture on the pros and cons of spending their money in this way. They are usually bemused as to why they still have to come to the doctor to get the prescription. Don't worry, they'll soon be able to order them through Sky TV!

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Prescribing costs – whose responsibility?

Peter Moodie is the Medical Director of PHARMAC

The New Zealand public spends over $700 million a year on prescription medicines and a significant proportion (about $500 million) is under the control of general practitioners. I do not want to debate the rights or wrongs of the quantum, however we do need to identify the rights and responsibilities that doctors have in relation to that level of expenditure.

Until two years ago I was in full-time general practice and large expenditure figures like these meant little to me. As far as I was concerned, if the country needed more money for pharmaceuticals it should simply find it because if a doctor said it was necessary that was the end of it. Now the majority of my time is spent on the other side of the fence and the view is very different. Like all of us, Government organisations work within a fixed budget and they have to be accountable not only for the budget they manage but also for the quality of the service they fund.

As with any budget we need to look not only at the costs and benefits of new therapies but also at the value we are getting from older 'off patent drugs'. To this end regulators are continually looking at the 'value of the portfolio' and testing to see if low value drugs are really worth the price paid for them. In clinical practice we do this when we change from one type of dressing or syringe to another. Basically, if another brand is of comparable quality and cheaper we have no issue about changing.

We need to ask why this should not be normal practice with pharmaceuticals. To use the parlance of the economists, most pharmaceutical expenditure carries few 'price signals' and indeed this is the whole point of the Welfare system. Absence of 'price signals' means that if a patient is sick he/she doesn't have the added burden of worrying about the cost of the medication. However, when the annual cost of a medication is, for example, up to $70 000 a year, we need to be sure that we really are spending our budget wisely. With a fixed budget and a variety of competing new therapies we need to ensure that we allocate these scarce resources in a fair and equitable manner.

Saving money on old drugs in order to fund new ones now seems very obvious, but three years ago, with the advent of reference pricing, that was a real ethical question for me. I guess the real question is: who has the ethical problem, the regulator or the drug company?

We now have many examples of drugs that have dropped in price by over 90% once they came off patent. If patients had been subjected to those 'price signals' and had to pay the full price they would have quickly made a quality versus price decision.

However, when the drugs are subsidised by the State, it is the State that must make the decision.

The unfortunate fact is that clinicians are often the meat in that sandwich and for that reason it is imperative that we fully understand not only the reasons for the subsidy changes but are also able to intelligently discuss the quality issues.

However, it is not just the patient who has been protected from 'price signals'. Within the constraints of the Pharmaceutical Schedule we have been able to prescribe according to what we consider to be best evidence and according to the needs of our patients. Although we are not personally accountable for the costs, a full-time practitioner is responsible for some hundreds of thousands of dollars. We need to ask how well we prescribe for our patients and how well we follow evidence based practice.

When I took on my role at PHARMAC I thought the answers to these questions were simple and it was just a matter of sorting out the bureaucrats. After all, I had been (and indeed still am part-time) in active practice.

> What surprises me is the length of time it has taken the State to demand accountability both in terms of safety and efficiency

The reality is that these questions are more complex than they look and simple answers don't necessarily stand up too well to intense scrutiny. It is easy to dismiss those who fund and regulate as 'bureaucrats' who have no real understanding of the real world, but at the same time they are accountable to Government and are looking for answers to the same complex questions.

Prescribing Prescribing

From the regulator's view it is a curious thing that clinicians have the right to prescribe and control public expenditure without accountability, which they see as a sort of 'droit de seignior'. The clinician argument is that for medicine 'the art is long', the training arduous and their true allegiance is to the patient. Added to that is the observation that there is no infrastructure to monitor this expenditure. The regulator on the other hand points out this is public money and should be accounted for; who pays the administrative costs for this accountability simply begs the question.

For me the right to prescribe is something that was bestowed on me by the State when I was granted a practising certificate by the New Zealand Medical Council. What surprises me is the length of time it has taken the State to demand accountability both in terms of safety and efficiency. Perhaps it is a tribute to the skills of medical professionals that they have been trusted to manage this area of expenditure for so long with minimal intervention.

With the arrival of nurse prescribing this question of rights and responsibility and accountability has taken a new twist as we ourselves argue whether nurses are responsible enough to have the 'right' to prescribe. The sad thing is that we should have been having that debate before the fact not after it.

As part of my role I talk to a number of groups, both lay people and health professionals. My impression is that most people can understand the concept of a fixed budget, but there is often tension around who gets what share. Real examples include:

- oncology groups critical of the amount of money spent on 'lifestyle drugs' such as statins
- cardiology groups critical of the amount of money spent on oncology drugs that do little for quantity of life
- neurological groups who believe that there is 'discrimination against the elderly'
- paediatric groups who identify children as being under-funded relative to other sections of society.

In an attempt to share out that budget there have been a number of formulae used to rationalise this debate and in New Zealand we have leant toward the concept of 'cost utility analysis'. It is the best economic model available, albeit not a perfect solution. However it forms the basis of a lot of pharmaceutical decision making and is something that clinicians should be familiar with. We should not be put off by the 'econospeak' and understand that 'utility' is a technical term to describe the benefits of a drug not only in terms of life or death but also in relation to 'quality of life'.

Just because there is a need for treatment it does not follow that the treatment will necessarily do much good

We also need to understand the difference between 'need' and 'capacity to benefit'. The distinction is that just because there is a need for treatment it does not follow that the treatment will necessarily do much good. As an example, there is an undeniable need for treatments to prevent Alzheimer's disease but the difficult question is whether we currently have drug treatments that have a real impact.

Some questions I hear from our analysts on a regular basis are: 'If drug A is better than drug B, why do doctors use more of drug B?' Or: 'If drug X and drug Y are of equal benefit why do they use the more expensive one?' Or, 'If the evidence suggests that everyone should be on drug Z, why isn't everyone on it?'

Sometimes there is a good reason why the 'evidence' is not being followed, but sometimes it is because we as a group cannot or are not prepared to take responsibility for the actions of others. For whatever reason, unless there is some responsible action from us as clinicians, we are at risk of 'regulation'. Sometimes that regulation will be in the form of a proscriptive decision such as a Special Authority or a requirement for a specialist recommendation.

The reality is that the regulator is often acting on what they consider to be best practice and it is incumbent on us to take some responsibility.

General practice should be one of the key decision makers in pharmaceutical management. General practitioners have the scientific background and the generalist experience to balance the rigid evidence based approach to funding but with a humane approach. However they must understand the fiscal and economic effects of their advice.

General practice needs to make its voice heard in the funding debate, but if it is to make a real impact it has to be constructive as well as critical. At times that may mean that we recommend certain therapies are funded at the expense of others. And like it or not, if we are to maintain our credibility as a group with special expertise in the health field we will have to take responsibility for our collective actions. To that end we have to demonstrate that we are knowledgeable in our field and maintain our standards.

For me the issues were summed up by the New Zealand health economist Brian Easton in the 2000 PHARMAC Annual Review when he wrote:

'Clinicians...have to be involved too, and committed to a strategy of ensuring the therapies they use are not only clinically effective but are also cost effective. Otherwise economists and accountants will make the decisions for them, because the cost dimension cannot be ignored.'

Finding a better balance between pharmaceutical supply and demand – a medicinal issue

Tim Maling is a consultant physician and clinical pharmacologist. He is a Clinical Professor and Director of Medical Services for the Capital Coast Health District Health Board

Do we need a more clinically realistic pharmaceutical management strategy?

Managing pharmaceutical expenditure in New Zealand, as in other countries, has focused on two key strategies. The national *supply* (availability) of free medicines is controlled largely by medicines subsidisation through various funding mechanisms, negotiated with pharmaceutical manufacturers, by the Pharmaceutical Management Agency (PHARMAC).

The effectiveness of PHARMAC's controversial *supply-side* strategies to lower the overall price paid for subsidised medicines has been widely acknowledged. Without these strategies PHARMAC estimates[1] that the subsidised drug bill for 2000 would have increased from $651 million to $992 million. In 2001, the growth in pharmaceutical expenditure was again held at around 2%, again reflecting aggressive supply-side strategies, without which growth would have been 9%. The health gains have not been so readily quantifiable.

Despite this aggressive price containment, prescribed drug volumes have consistently increased in the last five years, along with increasing prescription of more expensive medicines. The combined effect is an increasing overall pharmaceutical expenditure.[1] Not surprisingly, PHARMAC is turning its attention to the consumer *demand* for medicines and the *pressure to prescribe* is coming under increasing scrutiny. Several demand-side initiatives have already been trialed by PHARMAC.

Bosanquet[2] has encapsulated the concern shared by many for the potentially deleterious effects of unbridled supply-side management – 'we should be suspicious of any crude single solution overriding local clinical judgment.' He points to the shifting focus of drug therapy in NZ, with increasing scope for improved health outcomes through better targeting (appropriate prescribing), communication with patients and monitoring of results. Add to this New Zealand's 'turned off' pharmaceutical industry, and need for a more balanced perspective in managing pharmaceutical expenditure is all too clear.

Prescribed drug volumes have consistently increased in the last five years, along with increasing prescription of more expensive medicines

Over the last decade it has become abundantly clear that PHARMAC's supply-side strategies, such as the brand switching of cardiovascular medicines, can readily dominate and adversely influence desirable demand-side outcomes such as prescribing quality. As yet there is still no over-arching national medicines policy in New Zealand to ensure an appropriate balance of these initiatives and to ensure effectively targeted funding streams.

Like others involved in medicines utilisation issues in New Zealand, I share the view that PHARMAC, as a purchasing agency, should not be initiating and managing demand-side strategies. These are practice-based clinical strategies, the responsibility for which sits squarely with hospitals, professional colleges and the primary care organisations. This editorial questions PHARMAC's increasing involvement in the management of the demand for medicines, and highlights the need for a *clinically realistic balance* between the management of medicines supply and demand. By *clinically realistic* I am implying a national awareness of clinical besides fiscal priorities and a willingness to entrust *demand* management of medicines to prescribers.

National purchasing of hospital medicines

A good example of the need for better balance is PHARMAC's recent proposal for nationwide purchasing of hospital pharmaceuticals. The aim is to reduce pharmaceutical prices paid by hospitals by establishing a national hospital purchasing frame-

work, with DHB collaboration. Some have argued that the effect of this scheme will be to constrain medicines choice nationally – in the same way that a nationally restricted drugs list might do. The demise of the latter in the United Kingdom is a clear reminder of the limitations of such strategies. There are undoubtedly significant savings to be made in hospital pharmaceutical expenditure, but the crucial issue is the scope of the scheme – will it affect all hospital medicines, or just the top 25 or so most costly ones, which account for more than 85% of the total medicines cost? It may indeed be wise to limit the scheme to the high cost items, including some cancer medicines for which there are perceived issues around access. This would allow reasonable savings to accrue and it would avoid the otherwise inevitable disruption of hospital prescribing quality schemes, including preferred medicines lists, which would follow from 'all medicines' implementation. In the latter scenario, quality would tend to be centralised rather than devolved to the 'coal face' where it really counts – the prescriber/patient relationship and the therapeutic outcome.

Brand substitution and supply-side interference with prescribing quality

There is widespread concern and some evidence to suggest potentially significant health loss from some of PHARMAC's reference pricing and sole supply arrangements.[3,4] One example, the ACE-inhibitor reference pricing initiative, stands out. In this case, Quinapril, and to a lesser extent Cilazapril were substituted for other ACE-inhibitors in more than 85% of previously treated hypertensive patients. At the time, the therapeutic implications and health impact of this unique national initiative were unknown.

An evaluation of the brand switch, commissioned by PHARMAC, has been recently released.[4] The evaluation was based on a retrospective case study of the acceptability, sustainability and economic impact of the switch in 345 adult patients. A disturbing finding was that 30% of the patients did not sustain the initial switch and 11% of those patients with previously stable blood pressure remained uncontrolled six months after the switch. It is unlikely that brand substitution will occur again in New Zealand on such a massive scale, but its health impact will continue to be debated for a long time. Why did we allow it to proceed, when there were sound therapeutic principles for questioning its validity? When the decision was taken to proceed, did we as clinicians collaborate effectively with PHARMAC to ensure patient safety? Other findings from the evaluation would suggest we did not.

> Inappropriate prescribing is easy to find in the normal practice setting but difficult to define as a basis for intervention

Inappropriate prescribing

If we are to address the balance between demand and supply-side strategies we must also determine what constitutes 'inappropriate' prescribing, especially in the New Zealand environment. Inappropriate prescribing is easy to find in the normal practice setting but difficult to define as a basis for intervention. Nonetheless, we need to monitor these perceived aberrations according to agreed definitions and use targeted strategies to promote behavioural change towards improvement.[5]

Variation in prescribing behaviour is innate and sensible in clinical practice, but when it results in cost increases without health gain, the variation is inappropriate. The mistake made by some commentators is to assume that prescribing variation is inherently costly and therefore inefficient. There is little evidence to justify this belief.[5] The definition of prescribing 'outliers' and the drivers of variability is important in demand-side medicines management. Increasingly, the primary care sector is developing the capacity to monitor prescribing variability, although there is not a lot of consensus as to how this should be done.

There is a widespread belief that improved technology ('system orientation') will reduce *medication error*. This is only partly true and is dependent on the extent of the systematisation. Even with computerised prescribing, screen alerts and other devices are only an adjunct to a sound understanding of the basic principles of medicines choice. Peer review and the consensus process around the development of practice guidelines and medicines lists, is invaluable in building this understanding.

Demand-side prescribing quality programmes – PreMeC and BPAC

In New Zealand the two nationally funded prescribing quality assurance centres, PreMeC and BPAC, compete independently for limited funding. Both are under PHARMAC review, but in neither case has their full quality assurance potential been realised. Better collaboration between the two organisations with respect to their specialised outputs, coupled with committed longer term funding, could achieve so much more. PHARMAC funds both organisations and requires demonstration of their effectiveness as a reasonable prerequisite for continued funding. But how are these organisations to demonstrate their effectiveness in our highly unstable pharmaceutical management environment? The continually sole supply arrangements and reference pricing initiated by PHARMAC interfere with even quite simple interventional studies and trend analyses. Despite these local difficulties, there is considerable local evidence to support the effectiveness of PreMeC's interventions from collaborative research with the Wellington Drug Utilisation Research Unit. Neither PHARMAC nor the Ministry of Health have the skills or the

knowledge to replace these widely respected quality assurance centres. With appropriate funding the sophisticated outputs of both organisations can provide the basis from which to expand pharmaceutical demand-side management into primary care organisations.

Prioritisation of pharmaceutical expenditure

It is something of a paradox that in New Zealand's rationed health care environment we still lack the appropriate scale of collaboration between medical professionals and the fund managers for effective prioritisation of pharmaceutical expenditure. Cancer medicines have traditionally been the domain of the cancer specialists and PHARMAC has no experience in this field, yet nowhere is the issue of prioritisation more keenly felt at present than in the minefield of cancer medicines rationing.[6,7] It is becoming increasingly apparent that economic constraints are limiting patient access to long awaited new cancer pharmaceuticals – the expensive medicines get put on a waiting list.

In the UK the National Institute of Clinical Excellence (NICE) conducts appraisals of new drugs on behalf of the UK National Health Service and recommends which should be made available to patients.[8] Interestingly enough NICE's priority setting is based on evidence of clinical outcomes, but when expertly presented such recommendations are difficult to circumvent on purely fiscal grounds. PHARMAC's medical advisory group PTAC does sterling work in this area but there are fundamental disagreements between the medical practitioners on PTAC and PHARMAC's therapeutic portfolio managers. There is no easy answer. Medical practitioners need to understand their patients' requirements, but similarly PHARMAC will need to compromise on some of its fiscal objectives if we are to develop a clinically realistic balance in medicines management.

A national medicines policy

Government has been singularly silent in the development of a comprehensive national strategy to manage pharmaceutical demand. We have much to learn from Australia where a national medicines policy has been established including a national prescribing service (NPS), with explicit clinical input to drive a comprehensive demand-side strategy. The strategies include several interventions first pioneered in New Zealand by PreMeC and include individualised feedback on routine prescribing analyses and responses to nationally distributed case studies. Savings of around $25 million per year arise from NPS expenditure of a little over $5 million annually, the latter being a fraction of the total Australian subsidised drug expenditure of $4 billion. The Australians have managed to steal a significant march on New Zealand in the drive towards better prescribing, despite having a less structured primary care sector. The Australian Government has also realised the value of consumer participation and unlike the New Zealand Government has allocated $A14.6 million in the short-term, to promote consumer participation and demand-side strategies. The NZ Government on the other hand has a pragmatic and arguably short-sighted view in its continued reliance on a national purchasing agency to provide both supply and demand pharmaceutical management.

> Government has been singularly silent in the development of a comprehensive national strategy to manage pharmaceutical demand

Conclusion

There are key issues which we as prescribers must resolve if we are to implement effective demand-side strategies for the New Zealand environment. We have learned much from our two small prescribing quality assurance centres PreMeC and BPAC. We have an effective supply-side manager and purchase agency for pharmaceuticals. We have the makings of a democratic political mechanism for priority setting. We also have one of the highest standards of primary health care of any developed country. Yet we have no national drug policy and we have an imbalance between supply and demand-side pharmaceutical management which is costly and antagonistic. To some extent Government must carry some of the responsibility for this inertia – or is it exhaustion? Government must create an environment conducive to implementation of effective demand-side strategies, possibly through closer collaboration with those responsible for the Australian model. Similarly, primary care organisations must work more closely with PHARMAC to ensure that we can develop and sustain a *clinically realistic* medicines management strategy for the future.

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Paediatric prescribing in New Zealand

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ABSTRACT

Aim

To describe patterns of prescribing for New Zealand children under the age of six.

Methods

The computerised records of 220 824 consulting patients from 49 general practices from around New Zealand were examined. A subset of 25 595 patients aged five years or less was selected and their prescribed medications examined. Medications prescribed were coded to therapeutic groups. Utilisation was described in terms of demographic characteristics.

Results

The mean prescription rate was 2.9 scripts per annum. Of all consulting children, 72.2% received one or more prescriptions in their first year of life. 28.6% of one-year-olds were prescribed five or more times per annum. The most frequently prescribed medications were antibiotics, anti-asthmatics, paracetamol, dermatological steroids, and anti-infective ophthalmologicals.

Conclusion

For children attending general practice there is a high rate of prescribing per GP contact and this rate is highest for one- and two-year-olds. This data reflects the more vulnerable health status of children, and identifies areas in which there is need for care when prescribing to children.

(NZFP 2002; 29:14–18)

Introduction

There are many potential difficulties involved with prescribing to children. There is a paucity of randomised clinical studies designed to test medication use in children. Prescribers need to take into account the way in which the disposition of drugs in children differs from adults both pharmacokinetically and pharmacodynamically.[1] There is a strong call for studies into how medicines are being prescribed to children in various settings and populations.[2] Studies that have investigated prescribing in paediatric populations have found high prescribing rates, although a limited formulary of medications is used.[3,4]

This study describes prescribed medication for a New Zealand paediatric population by demographic variables. It is important to identify at-risk populations and help target scarce health resources to the benefit of those most in need. These include resources needed for prevention strategies such as patient education and self-management programmes, which are increasingly recognised as an important part of disease management and cost containment. This retrospective, observational data based research involved a large population and recorded (without altering or influencing) actual general practitioner prescribing practice.

Methods

General practice data from 49 computerised practices from around New Zealand for the period from 1 July 1998 to 30 June 1999 were examined. These practices were selected on the basis of their recording full electronic clinical records. All transactions relating to each patient including their demographic details, government medical subsidy eligibility, consultation records and prescribed medications are recorded in various practice management software. Practices supply data to the RNZCGP Research Unit after running extraction programmes that expunge all patient names to preserve patient confidentiality. Each patient is allocated a unique code which is individuating but non-identifiable. Data is imported into a database (Microsoft Access 2000) at the Research Unit for further analysis. Age for each child was calculated as at 1 January 1999 and patients under the age of six were identified. Age groups were defined in yearly intervals.

Prescriptions were coded to the Anatomical Therapeutic Chemical (ATC) Classification System as used in the New Zealand pharmaceutical schedule. In the ATC system the drug substances are classified into groups at five different levels. The first level consists of 14 anatomical main groups. The two subsequent levels are therapeutic or pharmacological subgroups (second and third levels respectively). The fourth level is a therapeutic, pharmacological or chemical subgroup, and the fifth level represents the chemical substance. A therapeutic group is defined as a set of phar-

Table 1. Mean number of prescriptions per person per annum by sex and card status.

Age (yrs)	Males	Females	Males vs. Females	CSC card	No card	CSC vs. No CSC	All patients
<1	2.07	2.02	ns	2.39	1.83	p <0.001	2.05
1	3.68	3.66	ns	4.21	3.24	p <0.001	3.67
2	3.32	3.17	ns	3.58	2.96	p <0.001	3.24
3	2.86	2.83	ns	3.05	2.64	p =0.002	2.84
4	2.66	2.52	p =0.044	2.76	2.43	p =0.042	2.59
5	2.33	2.44	ns	2.56	2.21	p <0.001	2.38
Overall	**2.88**	**2.85**	**ns**	**3.16**	**2.61**	**p <0.001**	**2.86**

maceuticals that are used to treat the same or similar condition(s). A subgroup is defined as a set of pharmaceuticals that produce the same or similar therapeutic effect in treating the same or similar condition(s).

The database also includes information about medications that do not receive Ministry of Health subsidies. We could not obtain information about drugs sold over the counter without a prescription for the study population.

Prescribed medication was calculated as a rate (number of prescriptions/child per annum) by age, sex and community services card status. The proportion of children who received at least one prescription and those that received five or more prescriptions was identified. We calculated the proportion of prescription items from the five most frequently prescribed medications from a therapeutic subgroup (ATC 2nd level) and the top twenty most frequently prescribed chemical substances.

> Patients with a community services card were prescribed to more frequently for all age groups compared to patients without a card

Results

The total consulting population for the 49 practices was 220 824 patients for the period 1/7/98 to 30/6/99. This is approximately 80% of the estimated population base that is serviced by these practices[6] (approximately 7.3% of New Zealand's population as at 31st December 1998). The data is geographically spread with 13.1% of the population coming from the Central region, 25.6% Midland, 24.5% Northern and 36.8% Southern.

There were 25 595 patients aged six years and under (52.1% were males) who consulted 143 021 times and were prescribed medication 73 319 times. These 73 319 prescriptions included 118 410 individual prescription items, of which there were 11 761 repeat medications. The mean prescription rate was 2.9 per child/year; there was little difference between rates of prescribing to males and females (see Table 1). Patients with a community services card were prescribed to more frequently for all

Table 2. Proportion of the study population who received >=1 prescription vs. those prescribed >=5 prescriptions

Age group (y)	<=1 prescription		>=5 prescriptions		Number of patients		
	Males	Females	Males	Females	Males	Females	Total
	%	%	%	%	n	n	n
< 1	73.2	71.0	13.4	13.7	1,874	1,618	3,492
1	81.6	84.3*	30.8	29.9	2,647	2,511	5,158
2	82.6	83.0	26.2	24.4	2,437	2,265	4,702
3	83.2	83.0	19.5	20.6	2,237	2,037	4,274
4	82.6	83.0	18.6	16.9	2,133	1,960	4,093
5	79.0	81.1	15.3	16.8	2,010	1,866	3,876
Total	**80.6**	**81.4**	**21.1**	**21.3**	**13,338**	**12,257**	**25,595**

* Significantly different p = 0.012, all others non-significant.

age groups compared to patients without a card.

Patients aged less than one were less likely to be prescribed medication than those aged one and over (72.4% versus 82.4%). The proportion of patients prescribed five or more prescriptions per annum peaked with 30.3% of one-year-olds, and then fell to 16.0% of five-year-olds (see Table 2.)

Overall 87.6% of all prescription items (including repeats) were prescribed from the five most frequently prescribed of the ATC level one therapeutic groups during the study period (see Table 3). Prescribing was from a relatively limited formulary. Only 330 chemical substances were used to prescribe to children out of approximately 1 100 listed at the time of the study. Of all prescriptions, 71.8% were from the twenty most frequently prescribed chemical substances.

Antibiotics were the most frequently prescribed medication item for all age groups, followed by drugs

Table 3. The most frequently prescribed main drug groups and therapeutic subgroups. Proportion of therapeutic group by therapeutic subgroup.

Therapeutic group				Age (years)			
Subgroup	< 1	1	2	3	4	5	Overall
n = number of prescription items	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Infections – Agents for systemic use*	n = 2,304	n = 10,375	n = 9,141	n = 7,426	n = 6,275	n = 5,511	n = 41,032
Penicillins	67.2	57.1	55.8	56.0	58.7	59.4	57.7
Other Antibiotics	16.2	22.2	21.9	20.3	19.9	18.5	20.6
Cephalosporins and Cephamycins	10.7	14.2	14.5	14.1	11.2	11.8	13.3
Macrolides and Aminoglycosides	5.3	5.7	6.6	7.5	8.4	8.4	7.0
All Others	0.6	0.8	1.2	2.1	1.8	1.9	1.4
Respiratory system and allergies*	n = 862	n = 3,640	n = 3,854	n = 3,745	n = 4,001	n = 3,871	n = 19,973
Antihistamines	14.8	27.0	26.8	22.8	19.1	15.3	21.8
Beta-adrenoceptor agonists – MDIs	10.3	17.1	22.0	26.9	26.1	28.4	23.6
Decongestants	44.9	21.6	13.5	9.5	7.9	6.3	13.1
Inhaled Corticosteroids – MDIs	3.8	7.7	12.4	16.6	22.0	23.8	16.1
Beta-adrenoceptor agonists oral liquids	6.0	10.4	7.9	5.5	3.8	3.5	6.2
All Others	20.2	16.2	17.4	18.7	21.1	22.7	19.2
Dermatologicals*	n = 2,170	n = 5,455	n = 4,184	n = 3,073	n = 2,629	n = 2,151	n = 19,662
Corticosteroids – Plain	24.7	27.9	31.4	32.1	29.6	28.6	29.3
Corticosteroids – Combination	30.6	28.2	19.8	15.1	13.1	13.2	21.0
Antibacterials Topical	9.3	7.0	10.8	14.0	15.4	15.9	11.3
Emollients	16.7	14.3	14.6	13.8	13.1	12.2	14.2
Antifungals Topical	11.8	11.3	6.7	5.4	4.9	6.1	8.0
All Others	6.9	11.3	16.7	19.6	23.9	24.0	16.2
Nervous System*	n = 1,936	n = 4,703	n = 3,804	n = 2,705	n = 2,245	n = 1,823	n = 17,216
Antipyretics & Non-Opioid Analgesics	99.0	98.0	95.6	93.0	93.1	92.8	95.6
All Others	1.0	2.0	4.4	7.0	6.9	7.2	4.4
Sensory organs*	n = 772	n = 1,504	n = 1,196	n = 936	n = 752	n = 632	n = 5,792
Anti-Infective Preparations	82.9	76.1	67.1	59.3	52.5	50.6	66.5
Ear Preparations	16.3	22.6	30.5	37.0	39.6	43.5	30.2
Corticosteroids & Other Anti-Inflam's	0.6	1.1	2.1	3.3	6.4	5.4	2.7
All others	0.1	0.3	0.3	0.4	1.5	1.3	0.5

*Note: The medications that constitute these ATC categories are listed in the New Zealand Pharmaceutical schedule.

prescribed for asthma, paracetamol, dermatological corticosteroids and anti-infective ophthalmologicals (see Table 3).

Discussion

This study examined general practice prescribing for patients aged less than six years, and provides important insights into prescribing patterns in New Zealand.

The results of this study indicate high rates of exposure to medication when consulting at general practice are present at an early age. This was especially evident for one-year-old children, with a mean prescription rate of 3.7 per consulting child/year. Prescribing was a frequent outcome of a general practice contact with 81.0% of patients aged less than six prescribed some form of medication during a consultation, which closely approximates results from the 1996/97 New Zealand Health Survey.[6] This high rate of prescribing may be a reflection of increased vulnerability of children to various illnesses. Prescribing for children was from a limited formulary of medications, which is consistent with evidence found in other countries.[2]

Although there were clear differences in rates of prescribing between community services cardholders and non-cardholders, the difference on average was not as pronounced for these data as has been found previously.[5] There were no significant sex differences in prescribing, which differs from previously published research, but the reasons for this are unclear.

There was a high rate of paracetamol prescribing with 14.8% of all prescription items for patients aged less than one being for some form of paracetamol. Although paracetamol is seen as a safe drug for children, there are the potential dangers of hepatotoxicity and the inhibition of the immune response if dosage is excessive.[6]

Antibiotics are frequently prescribed to young children; 60.6% of children under the age of six were prescribed some form of antibiotic, although it can be anticipated that a proportion of these prescriptions were not dispensed, for example due to the use of as needed prescriptions by general practitioners.[7] There are three main factors to take into account when prescribing antibiotics, the potential of allergic reactions, antibiotic resistance,[8] and more recently researchers have drawn attention to the possibility that paediatric prescribing of antibiotics could be related to later asthma.[9,10,11] Some potential drivers of excessive antibiotic prescribing are parental pressure and diagnostic uncertainty.[12]

The major strength of this database is its size, covering a large (albeit self-selected) sample of New Zealand's consulting population. Another strength is the completeness of the data available with every prescription recorded on the database, including prescriptions for medications that do not receive government subsidies and general practitioner prescribed over-the-counter medications. Importantly, the database provides individuation of data while maintaining patient confidentiality.

> Some potential drivers of excessive antibiotic prescribing are parental pressure and diagnostic uncertainty

The validity of research based on database records has been questioned for a variety of reasons:

(i) One central concern is that there are biases in selected data collections. This question has been addressed in a study that compared data from a group of randomly selected doctors that found no significant differences between the two groups.[13]

(ii) The lack of a clear population from which data is drawn. The design of medical software packages requires active management of patient registers – that is patients who had moved away, died or ceased to be patients of the practice must be removed from the system by the practice staff. It is therefore difficult to make inferences about patients who did not consult.

(iii) Some patients may see more than one general practitioner over the study period and so some prescriptions may not appear on the database.

(iv) The study is cross-sectional.

(v) Prescription data comes from general practice prescribing records not pharmacy dispensing records, and therefore failure to present or pick up a prescription was not measured. There are many different estimates for non-dispensing and the rate differs between different medication types, different age groups, sex, general practitioner, and day of the week.[14,15,16]

Despite these limitations in our study design, clinical databases are increasingly used to examine utilisation and are a valuable tool for general practice research.

Key points

- For children attending general practice there is a high rate of prescribing per GP contact and this rate is highest for one- and two-year-olds.
- Prescribing for children was from a limited formulary of medications, which is consistent with evidence found in other countries.
- 60.6% of children under the age of six were prescribed some form of antibiotic.
- The most frequently prescribed medications were antibiotics, anti-asthmatics, paracetamol, dermatological steroids, and anti-infective ophthalmologicals.

In summary, there is a high level of exposure to medication in paediatric populations. The most frequently prescribed medications were antibiotics, anti-asthmatics, paracetamol, dermatological steroids, and anti-infective ophthalmologicals. This is a reflection of the high frequency of infections and respiratory diseases in paediatric populations. This data can provide the justification and direction for future research and can become the baseline data set for future studies examining trends in disease occurrence, prescription patterns and therapeutic strategies for selected populations.

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Repeat prescribing practice in New Zealand

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Funding was received for the project from the Wellington Faculty, Royal New Zealand College of General Practitioners

ABSTRACT

Aim

To describe current repeat prescribing practice in New Zealand general practice.

Method

A self-completion questionnaire sought information from a random sample of general practitioners on repeat prescribing procedures.

Results

The practice of repeat prescribing without face-to-face consultation is widespread. Practices most commonly receive requests from patients by telephone to the practice nurse and/or receptionist. Clinical record review is often, but not always, undertaken by the doctor before the request is authorised. New patients and patients requesting recently commenced medication are very likely to be asked instead to come in for reassessment, while well-known patients on stable medication will most often be re-assessed six-monthly. Doctors are least likely to authorise repeat prescriptions for anxiolytics and antidepressants, for older patients, or those who have not attended within the last six months.

Conclusions

Respondents were very aware of the need for regular review and the clinical caution required for safe repeat prescribing. Clinical record review was found wanting for well-known patients on stable medication, although regular reassessment was intended. Good repeat prescribing systems are necessary to ensure a safe and effective service for patients.

Key words

Repeat prescribing, general practice, New Zealand

(NZFP 2002; 29:19–23)

Introduction

The issuing of a prescription for a previously prescribed medication without a face-to-face consultation with the patient is apparently commonplace. Repeat prescribing is considered accepted practice here[1] and in other developed countries.[2-4] Review has been sparse prior to the last decade. There is little information about this type of prescribing in the New Zealand setting, although the Royal New Zealand College of General Practitioners' Practice Standard Guidelines make mention of the need for repeat prescribing policies.[5]

Definitions of repeat prescribing vary. In the UK the issuing of a prescription without a consultation is different from repeat dispensing, where there is repetition of supplies of medication from a single prescription.[6] More recently, the term 'repeat prescription' has also been defined as all those items prescribed for a second or subsequent time, regardless of whether a face-to-face consultation took place.[7] Repeat prescribing by a GP without face-to-face consultation is the subject of this paper.

The benefits of repeat prescribing to the patient include convenience for long-term medication. Reduced waiting times, travelling times and costs are obvious advantages. For GPs time savings occur, although this is offset by the time taken by other practice staff to process requests for prescriptions.[8]

Risks include lack of recognition of changes in medical conditions, or

the development of side effects. The ability to check on correct drug taking, potential drug interactions and drug wastage is reduced.[6, 8]

Psychotropic, cardiovascular and gastro-intestinal drugs are among the most common drugs issued via repeat prescription.[1] There are well-documented problems of addiction, ineffectiveness and unwanted side effects with these drug groups,[10, 11] so timely review and proper authorisation are important. This is particularly so for the elderly who not only are more likely to receive these drugs than other age groups, but are also more likely to receive them via a repeat prescription.[9]

This study describes current practice for repeat prescribing in New Zealand. It identifies cardinal features of best practice and draws attention to some areas for improvement.

Method

A self-completion questionnaire was posted to a random sample of 300 general practitioners (GPs). The practitioners were randomly selected from the Royal New Zealand College of General Practitioners' (RNZCGP) membership database. Two reminders were sent out.

The survey sought information on practice policies and procedures of repeat prescribing. Repeat prescribing was defined as 'a repeat prescription that is issued by the practitioner, without a face-to-face consultation with the patient'.

The questionnaire listed a number of drug groups. GPs were asked to indicate on a Likert scale the extent to which these were prescribed without a face-to-face consultation. Three vignettes described clinical situations detailing a repeat prescription for a particular drug. The data was collected from December 2000 – January 2001.

Responses to the survey were collected, and the data was entered into a Microsoft Access 97 database. The quantitative data was imported into Epi Info for analysis. Comments were analysed qualitatively by coding and categorising the themes.

The Wellington Ethics Committee reviewed the study proposal, and deemed formal review unnecessary.

Results

A total of 205 questionnaires were returned. Eleven out of the initial 300 questionnaires were excluded from the sample due to the practitioner no longer being in active practice or current practice, or not able to be reached at the given address, giving a 71% response rate. The RNZCGP database from which the sample was drawn contains 92% of those registered as active general practitioners with the Medical Council of New Zealand.[12] The gender balance and distribution by year of graduation of the respondents is comparable to that of the national RNZCGP database. There was no significant difference between responders and non-responders with respect to gender or year of graduation.

Sixty-two per cent of the respondents in the study were male and 38% female. Forty-eight per cent were in a two to three doctor practice, 25% were in a four to five doctor practice, 14% were in solo practice, and 12% were in larger group practices. Fifty-seven per cent worked in suburban practice, 15% in inner city practices, 14% in rural practice and 9% in semi-rural practice.

> Psychotropic, cardiovascular and gastro-intestinal drugs are among the most common drugs issued via repeat prescription

Ninety-four per cent of respondents said they were members of the RNZCGP, 65% said they belonged to an Independent Practitioners Association (IPA), while 46% indicated that they were members of the NZ Medical Association. Seventy-three per cent of respondents received payment on a fee-for-service basis. Twenty-three per cent received some capitated funding.

Key points

- The practice of repeat prescribing without face-to-face consultation is widespread.
- Clinical record review is often, but not always, undertaken by the doctor before the request is authorised.
- New patients and patients requesting recently commenced medication are very likely to be asked instead to come in for reassessment, while well-known patients on stable medication will most often be re-assessed six-monthly.
- Doctors are least likely to authorise repeat prescriptions for anxiolytics and anti-depressants, for older patients, or those who have not attended within the last six months.
- Good repeat prescribing systems are necessary to ensure a safe and effective service for patients.

Repeat prescribing requests

Ninety-nine per cent of GPs had at some time renewed a prescription without a face-to-face consultation with the patient. Ninety-five per cent charged a fee for supplying a repeat prescription, most commonly between NZ$11.00 and NZ$15.00 per prescription. The standard fee for a non-subsidised face-to-face consultation ranges between NZ$35.00 and NZ$55.00.

Practices most commonly received requests for repeat prescriptions by phone-call to the practice nurse (85%) and/or to the receptionist (69%). Less popular methods included note or letter (38%), fax (33%), e-mail (6%), and phone-call to a prescription call-line (2%).

Most respondents (71.5%) reported that the practice nurse processed requests and printed the prescription,

while 49% said that this was also done by the receptionist. Only 18% of GPs were involved in this initial step. More than one person was often involved in the initial processing of requests for repeat prescriptions.

Clinical record review

Patients well-known to the doctor, on stable medication, were less likely to receive record review at the time of their repeat prescription request (61% of doctors) than those on new medication (98% of doctors).

Patients new to the doctor were very likely to be actively reviewed for both stable and new medication requests (98%, 99% of doctors respectively). Ninety-nine per cent of respondents would review a new patient on new medication, with 80% undertaking extensive review.

Recall for clinical assessment

For a well-known patient on stable medication, 94% of respondents would recall for assessment at least six-monthly. Six per cent would recall annually, or at a longer interval. For such a patient, 63% would recall for six-monthly reassessment, 30.5% would recall for three-monthly assessment, and 0.5% would recall after a month. Respondents commented that for many patients on long-term medication, it is intended that only every alternate prescription is issued as a repeat without a face-to-face consultation. In some instances, the practice nurse could undertake blood pressure assessment at the time of a repeat prescription request (e.g. anti-hypertensives, oral contraceptives).

> Of the drug groups enquired about, doctors were least comfortable about repeat prescribing anxiolytics, anti-depressants, insulin and oral hypoglycaemics

For a well-known patient on new medication, 97% of respondents would recall at least three-monthly (54% after a month, 43% at three months).

For a new patient on stable medication, 87% of doctors would recall at least three-monthly (77% at three months, 10% after a month)

For a new patient on new medication, 97% would recall at least three-monthly (82% after a month, 15% at three months).

Repeat prescribing of different drug groups

Respondents were asked about a number of drug groups, and how often they would be prepared to prescribe each without a face-to-face consultation (Table 1).

Of the drug groups enquired about, doctors were least comfortable about repeat prescribing anxiolytics, anti-depressants, insulin and oral hypoglycaemics. Doctors were more comfortable about repeat prescribing antihistamines, oral contraceptives and topical creams and ointments. Some commented that while some drug groups are frequently repeat prescribed, only one repeat is given before reassessment.

Repeat prescribing for a clinical scenario

Three case vignettes were described. Respondents commented on aspects of the associated prescribing. When asked to describe further action, respondents could respond with more than one option.

Vignette One

Vignette One described a 28-year-old patient again requesting Ranitidine for gastro-oesophageal reflux. She was last seen nine months ago. Sev-

Table 1. Repeat prescription of drug groups (without a face-to-face consultation) (n = 205)

Drug group	Never/rarely		Sometimes		Frequently/almost always	
	Number	%	Number	%	Number	%
Anti-depressants	114	56	79	39	9	4
Anti-histamines	18	9	73	36	111	54
Anti-hypertensives	52	25	91	44	57	28
Anxiolytics	140	68	51	25	11	5
Asthma drugs	28	14	93	45	81	40
Gastro-oesophageal reflux drugs	21	10	87	42	94	46
Hormone replacement therapy	31	15	85	42	84	41
Insulin	109	53	69	34	25	12
Non-steroidal anti-inflammatory drugs	32	16	116	57	55	27
Oral contraceptives	36	18	62	30	104	51
Oral hypoglycaemics	103	50	77	38	23	11
Topical medication (creams, ointments etc.)	19	9	75	37	105	51

enty-four per cent of respondents would not authorise the request. Of those respondents, 76% would ask the patient to come in for a consultation, 23% would further consult the patient's medical records, and 17% would further discuss the situation with the patient on the telephone. Some respondents commented that supply would depend on whether the diagnosis had been confirmed with endoscopy or H. pylori testing.

Vignette Two

Vignette Two described a 58-year-old patient requesting a repeat prescription for Quinapril. An overall blood pressure drop was recorded from 190/102 to 170/96 in the last consultation three months ago. Ninety-eight per cent of respondents would not authorise this request without further action. Of these, 96.5% would request the patient to come in for a doctor consultation. Four per cent of these respondents would further consult the patient's medical records, while a further 3% would further discuss the matter with the patient over the telephone. There were many comments about the need for further evaluation and possible change in medication. Some suggested that the practice nurse might give a consultation and blood pressure check.

Vignette Three

Vignette Three described an elderly patient requesting a repeat prescription of Diclofenac for pain due to osteoarthritis. She had not been seen for 14 months. Ninety-two per cent of respondents would not authorise this request without further action. The majority of these (84%) would ask the patient to come in for a face-to-face consultation. Fifteen per cent would discuss the situation with the patient on the phone, and 5% would further consult the patient's medical records. Many commented they would be unhappy with the use of non-steroidal anti-inflammatories in a woman of this age. Nearly all said 14 months was too long a period without review.

Discussion

This study describes the issuing of repeat prescriptions without face-to-face consultation as reported by general practitioners in New Zealand. It is common practice and comparable to other countries, particularly the UK.[4,7]

Given the near-universal use of telephones/faxes/e-communication in modern primary care, requests from patients for repeat prescriptions are likely to continue. Repeat prescribing is now an entirely justifiable part of general medical practice.[13] The challenge for prescribers is to provide a safe and effective service, where systems are in place to review patients and their medications at appropriate intervals.

Despite the potential benefits, and the advent of better quality patient records with computerisation, the practice of repeat prescribing has been found wanting in several key areas. Problems with the handling of prescription requests have been described,[14] as well as deficiencies with the on-going clinical aspects of the prescribing.[15,16]

The challenge for prescribers is to provide a safe and effective service, where systems are in place to review patients and their medications at appropriate intervals

Repeat prescribing has been described as three principal tasks – production, management control and clinical control.[16]

The study shows production of the prescription (receiving requests and printing) being handled by the practice nurse, and/or receptionist. Repeat prescriptions may save time for the doctor, but consume practice nurse and receptionist time. In many cases, more than one person was involved in production of the prescription. The study did not explore confidentiality issues regarding prescription requests, but this area of practice may deserve closer attention when several people are involved in the process.

Repeat prescribing has been described as three principal tasks – production, management control and clinical control

Management control is described[16] as comprising checks on authorisation, compliance and review, often carried out by a practice manager. This study did not ask specifically about manager involvement in repeat prescribing, but these tasks were included in questions about the doctor's role.

Clinical control constitutes authorisation and periodic review. The RNZCGP recommends that practices have 'a policy for reviewing the necessity and appropriateness of repeat prescriptions, where appropriateness means ensuring prescriptions do not allow for over-prescribing, drug interactions, and abuse by patients'.[5] UK recommendations about good prescribing systems state that 'all prescriptions should be reviewed and signed by a doctor who knows that patient and who has direct access to the clinical record'.[6]

While nearly all respondents indicated that they would review the clinical records for new patients, and those on new medication, only two-thirds would review the clinical record for a known patient on stable medication. However, most GPs would recall known patients on stable medication for assessment at least six-monthly, and those on new medication at least three-monthly. Thus, while respondents intended to issue only every alternate prescription without a face-to-face consultation, it was not clear how information about time since last review and previous clinical measurement results were found without checking the clinical record each time a prescription was authorised.

The type of drug group made a difference to the willingness to repeat

prescribe in the study. The reluctance to repeat prescribe anxiolytics and antidepressants is not surprising, given the propensity for addiction and unstable clinical situations to occur in patients on these medications. This finding is consistent with general prescribing practice in New Zealand for these drug groups.[17, 18]

The clinical scenarios revealed that most GPs would want more information before issuing a repeat prescription in situations where a pattern of regular prescription with regular review at an appropriate interval was not evident. Most would ask the patient to come in for a face-to-face consultation. The study did not explore the nature of the practice nurse's consulting role in repeat prescribing, but this is an area where considerable activity took place.

Unlike the UK, patients in New Zealand pay the GP directly for consultations and repeat prescriptions. This study did not explore patient expectation, but it would be reasonable to assume that patients pay in expectation of a safe and effective service for repeat prescriptions, just as they do for consultations. Consumer perceptions about repeat prescribing practices are an area worthy of further investigation.

In conclusion, this study found that repeat prescribing is commonplace in New Zealand general practice. Most GPs indicated the need for regular review when issuing a repeat prescription, and most were well aware of the clinical caution required for safe repeat prescribing, particularly with some drug groups, yet the study indicates that adequate review may not always happen in practice. The study found that known patients on stable medication did not always get active review of their clinical records, although most GPs would ask patients to consult at regular intervals. This study addressed a lack of research on repeat prescribing in New Zealand and raises questions that need further research on how all members of the general practice team, including patients, manage repeat prescriptions and the associated confidentiality issues.

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Can community service card possession be used to measure need?

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ABSTRACT

Introduction

If general practice is to move towards capitation funding, formulation is necessary to adjust for practices with a high proportion of poor health status and high healthcare service utilisation. One option is to use community service card (CSC) holding as a measure for high-need populations. The aim of this study was to measure the uptake of the CSC in a random population sample, and to determine whether there were any differences in uptake of the CSC by ethnicity.

Method

Random selection of individuals from West Auckland households were surveyed regarding CSC status, ethnicity, doctor visits and family income. The survey was 'quota'd' for ethnicity to determine if uptake differed between ethnic groups.

Results

One thousand one hundred and sixty out of 1 812 households were contactable (response rate of 64%). From these, 662 individuals were randomly selected and interviewed in depth. 44.6% said they were CSC holders. Analysis indicated that 33.4% of non-CSC holders were eligible for a card and these were disproportionately likely to be Mäori and Pacific people, large families and young people. Even if all those eligible in the non-contactable households were assumed to hold cards, the effect was sufficiently large that the data still shows diminished CSC uptake in deprived households.

Discussion

A significant proportion of people eligible for a CSC do not have one. Furthermore uptake is biased against Mäori and Pacific people, large families and young people. Card-holding inadequately measures need – adjustment is required for ethnicity and other factors.

(NZFP 2002; 29:24–29)

Introduction

It is well-established that low socio-economic status is associated with a greater incidence of chronic illness and increased GP visits. International research on the correlation between socio-economic status and health is compelling. Inequality in health status was clearly identified in Britain twenty years ago in the Black Report.[1] A 1994 BMJ editorial commented that while the social causes of ill-health are inadequately understood, the health differences between rich and poor have become more striking as the poverty gap has widened.[2]

The association between socio-economic status and poor health status similarly has been established in New Zealand. For example, there are well-documented differences in mortality between high and low socio-economic groups with ratios as high as 5 to 1 in the 15–24 age group.[3] There are also ethnic differences. Mäori mortality is significantly higher than non-Mãori, even after controlling for social class.[4] Mäori have more hospital discharges for asthma (5.6/1 000 vs 3.3/1 000) and more hospital discharges for ear infections (192/100 000 vs 135/100 000).[4] Other studies show that hepatitis B,[5] rheumatic fever,[6] diabetes[7] and lung cancer[8-10] are more prevalent in Mãori.

Regions with disadvantaged populations appear to receive less than their share of the available health services. A study of public health expenditure in Auckland found that affluent populations in the central city received higher than expected expenditure, whereas poorer populations in South Auckland had significantly lower expenditure.[11] Analysis of national data in 1994 to 1995 also showed significant under-utilisation of, and expenditure on,

primary health care services to Mäori and other New Zealanders in poor circumstances.[12]

Subsidy regimes do not always achieve the desired redistribution of medical resources. A study of primary care utilisation following the 1992 New Zealand health reforms which provided subsidies and charges reshaped to favour poorer people found that the latter were not advantaged by the regime and may even have been adversely affected by the changes.[13]

General practice (GP) funding is moving from a fee-for-service towards a capitation funding scheme. Under such a scheme, providers are paid a lump sum to provide primary medical care for a registered population, with the lump sum adjusted for certain demographic characteristics of that population. The formula for determining capitation is currently under review. If there is to be adjustment of payment to GPs who have a high proportion of patients in their care with relatively poor health status and who are high users of health care services, then a measure is needed to allow for appropriate weighting of the formula. If this is not achieved, GPs practising in areas of high deprivation will be financially disadvantaged.

The proportion of high-need patients in a GP's practice will need to be determined, taking both socio-economic status and ethnicity into consideration. Classifications of occupations to assign social class groups has been used in New Zealand research situations, but this data would not be available from providers, at least in the short-term. Furthermore research indicates that such classifications do not adequately allow for variability between ethnic groups (Mãori/Pacific Island and Pakeha) of indicators of social disadvantage.[14]

Community service card (CSC) holdings have been viewed as a readily available measure of need.[15] The CSC is a dichotomous indicator of income adjusted for family size. One possible approach to redistributing resources, which has been used in capitation calculations, is to increase the subsidy for CSC holders and reduce it for non-CSC holders, within a fixed budget. The expectation might be that providers would pass on the subsidy changes by reducing their fees to CSC holders, and possibly by increasing them for non-CSC holders. It has also been proposed to use the proportion of CSC holders in a provider's registered population as an indicator of population health need which can be used to redistribute resources to high-need populations.

> The abrupt cut-off for eligibility creates a 'poverty trap' for those at the low end of the non-eligibility population

Concerns regarding the use of CSC holding for targeting funding for capitated general practice have already been expressed by Crampton and Gibson in 1998.[15] The disadvantages of this mechanism they cite include the CSC being a poor measure of socio-economic status because it is based solely on equivalised income (whereas education and occupation are also socio-economic determinants); a significant proportion of those eligible are non-holders; and the abrupt cut-off for eligibility creates a 'poverty trap' for those at the low end of the non-eligibility population.

Key points

- As we move towards capitation funding, one option is to use community service card (CSC) holding as a measure for high-need populations.
- A significant proportion of people eligible for a CSC do not have one.
- Uptake of the CSC is biased against Mãori and Pacific people, large families and young people.
- Relative income is not the only predictor of socio-economic disadvantage.
- The CSC alone is inadequate as a surrogate measure of need, and other factors, in particular ethnicity, need to be taken into account.

In 1993 the Health Reforms Directorate commissioned the 'Micromarkets' or 'Primary health care utilisation and expenditure survey'. This comprised a consumer survey, collection of pharmacy data, and the collection of consultation data from a sample of local GP patient records. The latter were collected from a one in 10 random sample of all active patients of 32 GPs – in total from 6 157 patient records on 21 486 consultations and 20 537 prescriptions. CSC were held by 39.0% of patients and high user cards by 2.0%.[16]

Data from this survey supported the use of the CSC as a surrogate measure of health need. CSC holders have an average 4.24 consultations per annum compared with 2.99 for non-CSC holders, and receive an average of 6.74 prescription items per annum compared to 4.89 for non-CSC holders. Holders of CSC have increased odds of having certain chronic conditions (see Table 1).

Table 1. Increased odds of CSC holders having certain chronic conditions

Chronic condition	Odds ratio	95% confidence interval
Musculoskeletal	1.32	1.03 – 1.71
Asthma	1.54	1.24 – 1.87
Hypertension	1.67	1.34 – 2.02
Major psychiatric	2.43	1.61 – 3.82
Diabetes	2.59	1.73 – 3.96

These data show that at present the CSC is associated with health need, as well as measuring relative economic disadvantage.

However, whether the CSC is an adequate measure to calculate the adjustment needed in capitation payments to allow for high need patients has not been established. Use of the CSC in this way relies on CSC uptake being reasonably high, and most people entitled to a CSC actually holding one. Alternatively, if the uptake of CSC is relatively low, a scaling factor could be used to adjust overall CSC holding rates to those expected for the whole population. This latter option would only be valid if there is no bias in uptake, and those non-holders who are entitled to CSC represent a uniform population.

Anecdotal data from various sources has suggested that this is not the case, and that Mäori and Pacific Island populations are less likely to hold cards to which they are entitled than other populations. Data suggests that the take-up rate in particular high-need populations may be significantly lower.[17]

The aim of this study was to measure the uptake of the CSC in a random population sample, and to determine if there were any differences in uptake of the CSC by ethnicity.

Method

The Auckland RNZCGP Research Unit commissioned a survey by MRL Research Group to determine the degree of uptake of CSC by eligible families.

The sample was drawn from West Auckland, an area whose demographic profile closely matched that of the North Health region by age and ethnicity. It also coincided with the catchment of practices of the doctors participating in the urban GP utilisation survey, which had found that CSC is a significant predictor of utilisation.[17]

Anecdotal data has suggested that Mãori and Pacific Island populations are less likely to hold cards to which they are entitled than other populations

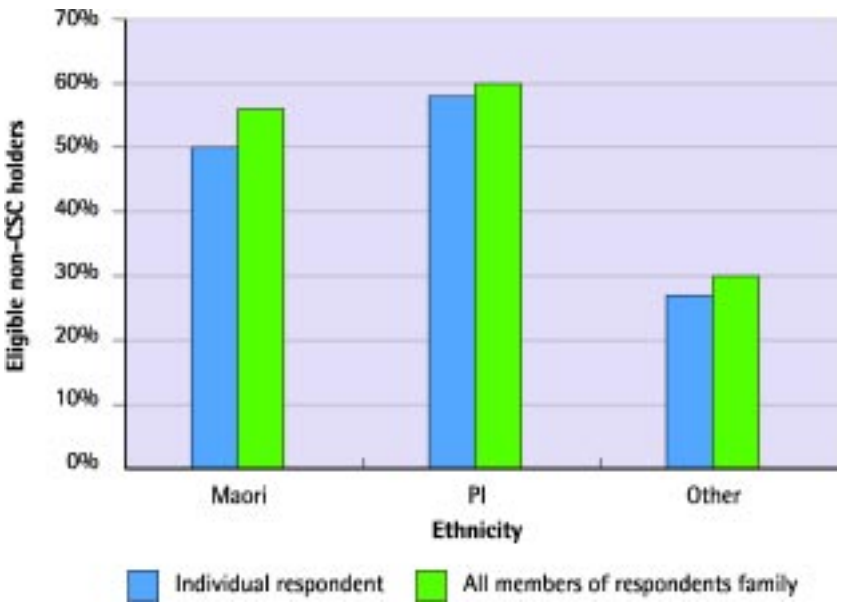
The number of families comprising a single household was established, and then individuals were randomly selected. CSC eligibility was determined by collecting information on all sources of family income. Individuals were sampled rather than households or families because capitation budgets will be worked out according to the characteristics of individuals. However CSC eligibility is determined by a test of family income adjusted for family size, and this selection process eliminated any possible bias against large families or large households.

As one of the key goals was to determine if uptake differed between ethnic groups, the survey was 'quota'd' for ethnicity. Once 175 'Other' interviews had been obtained, only Mäori and Pacific Island individuals were invited to participate. This increased the power of the survey to determine whether there was a difference in uptake rates by ethnicity.

Data collected included age, gender, ethnicity, relationship to other members of the household, CSC status, number of visits to a doctor over the past three months, sources of income and total income for the family. The Income Support criteria for CSC eligibility were then applied. Interviews were conducted by proxy for those unable to respond due to age or disability. Selected individuals were offered an interview in their first language if they wished.

The survey was conducted by face-to-face interviews over a two-week period. Interviewers called back up to three times at differing times to make contact with the selected household.

Figure 1. Non-CSC holders eligible for CSC by ethnicity



Results

A total of 2 513 households were initially selected. Of these, 701 failed to qualify for reasons such as full quotas, or not being selected by the randomisation protocol. This resulted in 1 812 eligible households. Of these, 652 households were not contactable after three call-backs, giving a response rate of 64%. From the 1 160 households contacted, 662 individuals were randomly selected and interviewed in depth.

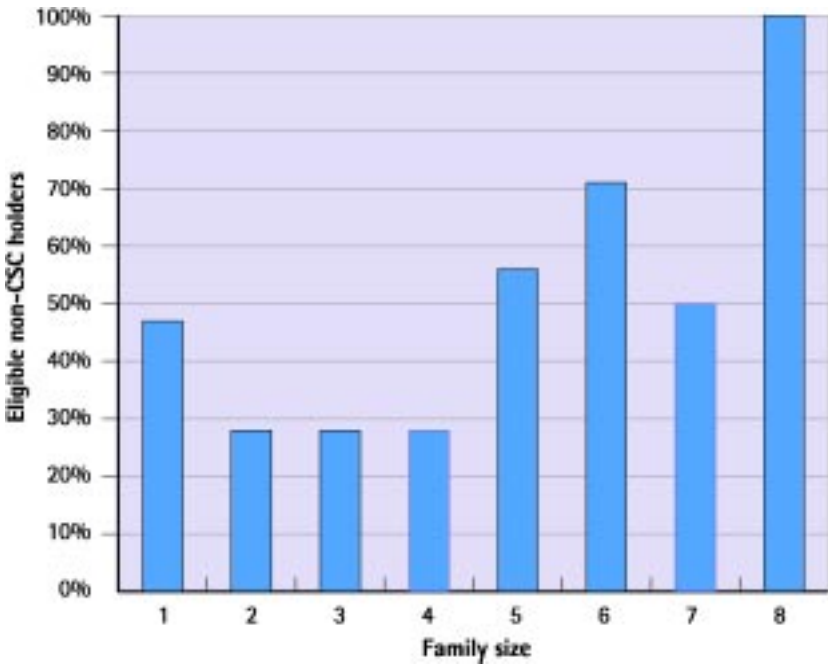
Of the 662 individuals interviewed, 295 said they held a CSC, a holding

rate of 44.6%. This compared with an eligibility estimate by the then-Department of Social Welfare of 53% (1.83 million) in 1992, and an eligibility estimate of 47% in the Personal Health Formula calculations in the 1996/97 RHA Policy Guidelines.

As levels of paid employment had increased, the estimated eligibility for the CSC decreased over the previous three years. If the actual card holding rate (44.6%) is divided by this estimate of eligibility (46.6%) an 'uptake rate' of 95.7% is obtained. In the 'Micromarkets' survey, conducted in rural NZ in 1992/3 and which formed the basis of the earlier report for North Health, the estimated uptake rate was 74% (39%/53%).[16]

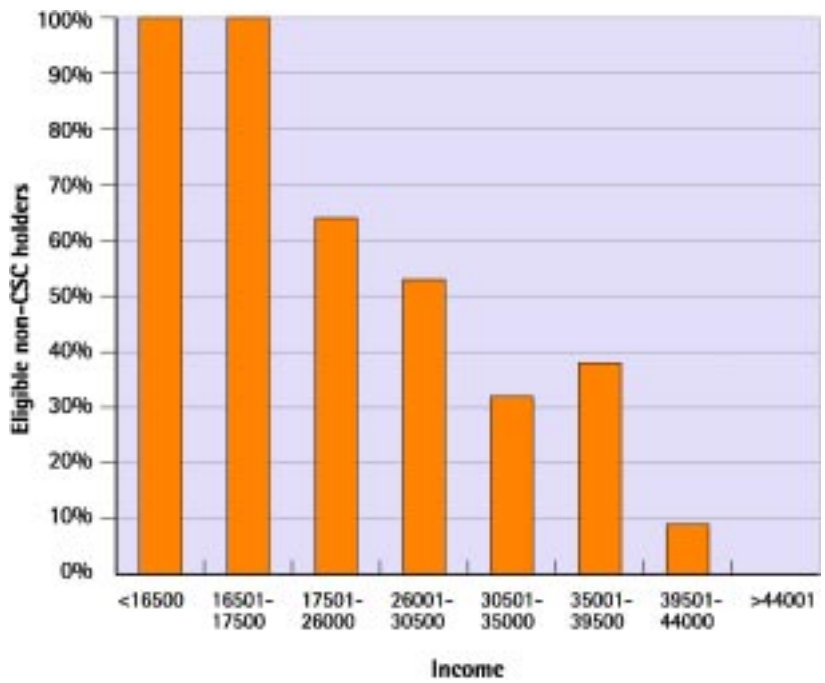
The group of people who did not have a card (367/662) was analysed by ethnicity to determine ethnic group specific non-uptake rates (see Figure 1). Of the 96 Mäori interviewed, 50% (48) were eligible for the CSC. For Pacific Islands people the figure was 58% (51/88) and for Others it was 27% (50/182). The second bar in the figure represents the effect of including all the family members of the non-CSC holder in the calculation of the non-uptake rate. When the data is re-weighted to the North Health ethnicity profile (assumed to be Mäori 13%, Pacific people 9.9%) the data suggests that 33.4% of non-CSC holders are eligible for a card.

Figure 2. Non-CSC holders eligible for CSC by family size



This data is inconsistent with the estimated national eligibility figure of 47%. If all people deemed to be eligible for a card actually got one from Income Support, and all people who said they held one actually had a CSC, the total number of possible card holders in the sample of 662 would be 295 + 149 = 444, a CSC holding rate of 67.1%, which is extremely unlikely. It is likely that a significant proportion of the people who said they had a CSC either did not actually have one, or they had had a CSC in the past but it had expired. Also, persons who were calculated to be eligible for a CSC but did not have one may have understated their income. The purpose of the study was to establish whether there was any differential non-uptake, as scaling to national figures can adjust for consistent levels of under or over-reporting.

Figure 3. Non-CSC holders eligible for CSC by income



Discussion

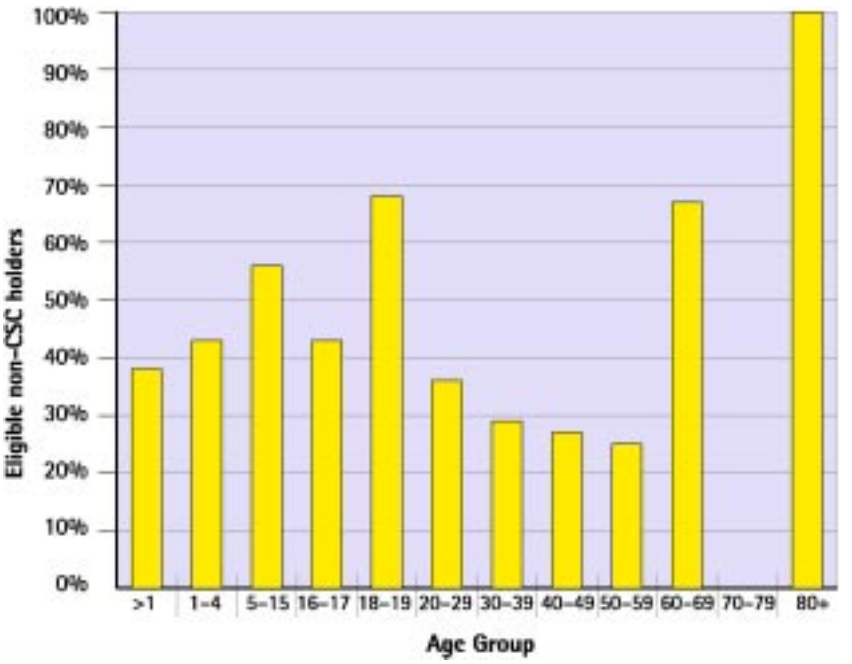
The data demonstrated an inequality in CSC uptake. It was found that as family size increased, the prob-

ability of not holding a card that you are entitled to decreased (Figure 2). Lower income biased towards reduced uptake: the lower your income the less likely you are to hold a card that you are entitled to (Figure 3). Anyone earning under $16 500 is entitled to a card, yet there were 50 single adults with this income who did not have a CSC; there were 19 single adults living alone and earning between $16 500 and $17 500 who did not have a card. The increasing uptake with rising income may reflect the effect of increased education or decreased alienation (e.g. decreased language or cultural barriers to negotiating the CSC application process). Finally, Figure 4 shows the relationship with age. A significant part of the problem of non-uptake appears to be with young people not getting the cards to which they are they are entitled.

This data is consistent with the ethnicity results. Mäori and Pacific Island families tend to be larger, poorer and younger than Pakeha families.[18] This confirms earlier anecdotal reports and suggests that should the CSC be used in the capitation formula, the differential uptake by ethnicity needs to be taken account of.

A relatively high proportion of households were not contactable after three visits (36%, n = 652). Non-responders could potentially contribute confounding and countervailing biases. On the one hand, people away at work, and hence belonging to a higher income bracket, may have been over-represented in the non-responders, although this factor was partly addressed by the interviewers returning on three occasions at different times. On the other hand, non-responders may have included a significant number of households choosing not to open the door because of reluctance to engage with perceived state agents, a group more likely to belong to low income categories. However, even assuming that all eligible non-responders held cards, the effect in our findings was sufficiently large that the data still would have shown diminished CSC uptake in deprived households.

Figure 4. Non-CSC holders eligible for CSC by age group



The CSC is a crude measure of income adjusted for family size. The eligibility criteria mean that as a tool for targeting relatively economically disadvantaged groups it is potentially quite useful. However it suffers from two major flaws.

> A fair redistribution formula should recognise that the CSC alone is inadequate as a surrogate measure of need

The first is that a significant proportion of those people eligible for a CSC do not have one, as previously indicated by Micromarket data and now demonstrated by our data. Furthermore, uptake is biased against Mäori and Pacific people, large families and young people.

The second criticism is a more general one. Relative income is not the only predictor of socio-economic disadvantage. The experience of CSC holders in certain geographic areas, for example South Auckland or the Far North, can be viewed as a syndrome, a cluster of social disadvantages which together cause much greater health need than the income measurement would predict. These people have low educational attainment, are often Mäori or Pacific people, come from violent homes, live in overcrowded conditions, have often been the victims of physical and/or sexual abuse and many have never had a job, nor have any likely prospect of a job.

A fair redistribution formula should recognise that the CSC alone is inadequate as a surrogate measure of need, and that other factors, in particular ethnicity, need to be taken into account.

As an alternative, serious consideration should also be given to adjustment to recognise other determinants of health need, on the basis of other demographic statistics, for example ethnicity. This could be based on a deprivation score (e.g. NZDep96) for geographically based provider groups or on data supplied by provider groups themselves. This is an approach that could be adopted if the CSC was dropped by government.

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Asthma, allergy and the hygiene hypothesis

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ABSTRACT

Recent studies have shown high prevalence rates of asthma symptoms in developed countries, including New Zealand, compared with developing countries. The *hygiene hypothesis* was evolved in the late 1980s as a potential explanation for the rise in asthma prevalence worldwide. It is hypothesised that early childhood infections may protect against the acquisition of atopy. Evidence suggests that in recent years reduced exposure to infections because of 'westernisation', reduced family size, improvements in hygiene and increased medical interventions such as antibiotics and vaccinations, may be contributing to the observed increase in atopic diseases.

This article outlines the *hygiene hypothesis* and the evidence available to support the view that the rising prevalence of asthma can be ascribed to reduced infections and increased 'cleanliness'.

Key words

Asthma, allergy, hygiene hypothesis

* * *

Over the past three decades there has been an increase in asthma observed in most countries. The increase in prevalence cannot be explained by changes in genetic factors or by improvements in diagnosis alone. Environmental factors, particularly those associated with a Western lifestyle, are believed to play an important role.

In the late 1980s, Strachan found that repeated infections in early life may prevent the development of hayfever.[1] He suggested that an important factor related to the increase in atopic diseases in Western countries is the decreased exposure to cross-infections among younger siblings as a result of decreased family size.[2]

This *hygiene hypothesis* challenged the immunological opinion prevailing at the time which was that early childhood infections might promote, rather than protect against, allergic sensitisation.[3] Recent advances in our understanding of T-lymphocyte differentiation, however, support a possible mechanism for a protective effect from early exposure to infections.[4]

> Reduced exposure to infections because of 'westernisation'...may be contributing to the observed increase in atopic diseases

The early years of life are recognised to be very important in the development of the immune system. Human T-helper cells diverge into two separate subsets – T-helper 1 (Th-1) cells and T-helper 2 (Th-2) cells. Th-1 cells are effective in eliminating certain viruses and intracellular pathogens and regulate delayed-type hypersensitivity reactions. Overproduction of Th-1 cells are implicated in some autoimmune diseases. Th-2 cells are effective in eliminating extracellular pathogens such as helminthic parasites and are responsible for immune responses to persistent antigens, including environmental allergens. Th-2 cells recruit eosinophils and activate mast cells, leading to allergic and inflammatory conditions. The two T-helper subsets cross-regulate each other and the balance between the two determines whether or not an immune response is appropriate or detrimental.[4,5]

It has been proposed that the fetal immune system is weakly skewed toward the preferential development of Th-2-type immune responses.[6] Early infection, whether with viruses or bacteria, will tend to stimulate a Th-1 immune response which will switch any Th-2 biased allergic immune responses to a Th-1 immunising pattern. The time period that is critical for the reversal of the Th-1/Th-2 balance is not clear, but maturation of the immune system continues up to five to seven years of age.[7] As the peak incidence of asthma is in the first four years of life, in-utero and early childhood exposure to infecting organisms may be expected to have a greater impact on the development of asthma than later infections.

What is the evidence to support the *hygiene hypothesis* and the view that the rising prevalence of asthma can be ascribed to reduced infections and increased 'cleanliness'?

Family size/sibling numbers

The average family size in developed countries has decreased over the past century. In New Zealand the birth rate was 1.98 births per woman in 2001, compared to 4.2 births per woman in 1960 and 3.1 in 1920. In 1966 there was an average of 2.5 children per family, falling to 1.95 children per family in 1996. There has also been a two- to three-fold reduction in the proportion

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of New Zealand families with four or more children in the past four decades.[8]

Sibship size has been shown to be a strong determinant of atopic conditions in children, adolescents and adults.[9] The structure as well as the size of the family also appears to be influential. Older siblings have been found to provide a greater protective effect against the development of atopic disorders than younger siblings,[1] this effect is more pronounced with brothers than sisters.[10] Furthermore, sharing a bedroom as a child provides a protective effect which is independent of family size.[11] Some studies have indicated that a low birth order is a risk factor for the development of atopic disease although results are conflicting. Overall these studies are consistent with the hypothesis that repeated infections in early childhood transmitted by contact with older siblings prevent the development of atopic immune responses.

The 'sibling effect' has mainly been shown for atopy. However a recent study by Ball et al[12] examined the exposure to siblings during infancy in relation to the subsequent development of asthma and frequent wheezing in over 1 000 children. The presence of one or more older siblings at home was found to protect against the development of asthma (adjusted relative risk for each additional older sibling, 0.8; 95% confidence interval [CI], 0.7-1.0). Although the children with older siblings had more frequent wheezing during the preschool years compared to children with no older siblings, this ratio reversed in later childhood.

The same sibship effect has been shown in New Zealand families. A case-control study based on the New Zealand arm of the International Study of Asthma and Allergies in Childhood (ISAAC) found that, after controlling for confounders (including infections, atopy and socioeconomic status), family size was inversely related to the prevalence of asthma.[13] Having no or one sibling was associated with an increased risk of asthma compared with having more than one sibling.

Day-care attendance

While sibling numbers may have declined in recent decades, day-care attendance has increased. If the presence of older siblings protects children against the subsequent development of allergic disease by exposing them to more infections in early childhood, then attendance at day-care should have a similar effect. Day-care attendance is lowest among children from low-income families, a group in which asthma morbidity is high.[14]

Atopic sensitisation occurs considerably more frequently in West German children than their peers in East Germany (37% versus 18% respectively), as does asthma, hayfever and bronchial hyperreactivity.[15] The high frequency of early day-care use in East Germany prior to unification has been proposed as an explanation for these differences. Day-care attendance was characteristic of the former East German lifestyle where the majority of women worked and up to 71% of East German children aged one to three years attended day-care. In comparison only 7% of West German children in this age group accessed day-care.[15]

> Older siblings have been found to provide a greater protective effect against the development of atopic disorders than younger siblings

Results from studies examining the issue of day-care attendance and subsequent risk of asthma have been conflicting however. Some of this confusion may arise from the multiple causes of wheezing during childhood. Wheezing in preschool children is primarily associated with infections, whereas in school-age children atopy and bronchial hyperresponsiveness is more important.[16] It follows therefore that early exposure to other children (either at home or in day-care) puts preschool children at greater risk from wheezing associated with respiratory infections, but this may also help protect them from IgE-associated wheezing in later childhood.

Attendance at day-care was found to be a risk factor for wheezing and asthma in children less than five years of age,[17,18] but among children 5–14 years old the frequency of asthma was inversely associated with previous day-care attendance.[19]

The Tuscon Children's Respiratory Study[12] also showed that attendance at day-care in the first six months of life protected against the development of asthma (adjusted relative risk 0.4; 95% CI 0.2-1.0). Although these children were found to have more frequent wheezing at the age of two years they were less likely to have frequent wheezing from the age of 6–13 years.

In a cross-sectional study of 669 German children aged 5–14 years from small families (up to three peo-

Key points

- Recent studies have shown high prevalence rates of asthma symptoms in developed countries compared with developing countries.
- Early childhood infections may protect against the acquisition of atopy.
- The hygiene hypothesis suggests that the rising prevalence of asthma can be ascribed to reduced infections and increased 'cleanliness'.
- Some reports have suggested a lower prevalence of allergic disease, including asthma, among young people raised on farms.
- Childhood exposure to pets seems to protect against allergy.

ple), those who entered a day-care centre between the age of six and 11 months had fewer allergies later in childhood than children who first attended day care at an older age. In 1 761 children from larger families (more than three people) age of entry to day-care had no effect on atopy.[19] Possibly those children from larger families had already been exposed to cross-infection and hence there was no additional benefit from day-care exposure.

Early viral and bacterial infections

The role of viral infections in the development of asthma has been the subject of considerable research and debate. Most wheezing lower respiratory tract infections in the first years of life are caused by respiratory viruses, particularly respiratory syncytial virus (RSV).[20] RSV infection has been associated with more rather than less allergy[21] – a finding which would appear to conflict with the *hygiene hypothesis*.

Stein et al however have reported that while children with a history of RSV lower respiratory tract infections were at increased risk of recurrent wheezing at the age of six years, this risk markedly decreased by the age of 13 years.[22] Furthermore, children with a history of RSV infection were less likely to have raised total IgE levels or be sensitised to local aeroallergens compared to children without a history of infection.

A study of West African children has shown an inverse relationship between measles infection and atopy. Of 133 participants who had had measles, 17 (13%) were atopic, compared with 33 (26%) of the 129 who had not been infected with measles.[23] Infection with measles virus therefore appears to prevent the development of atopy in African children.

These results have not been reproduced in other studies. A British 1970 birth cohort of over 13 000 children showed no evidence of a protective effect from wild measles.[24] In a Finnish study of over half a million children, those with a history of measles illness had an increase in the prevalence of asthma, hay fever and eczema.[25]

The prevalence of atopy and respiratory allergies has been found to be inversely related to the level of exposure to orofaecal or foodborne pathogens such as Toxoplasma gondii, hepatitis A virus and Helicobacter pylori.[26] The same relationship was not seen with viruses transmitted through other routes, that is, mumps, rubella, chickenpox, herpes simplex virus type 1 or cytomegalovirus. These results suggest that orofaecal and foodborne microbes may be better than airborne respiratory viruses for providing a 'protective' effect against atopy. Hence hygiene and a westernised, semi-sterile diet may be facilitating atopy by influencing the overall pattern of gut commensals and pathogens that stimulate the gut associated lymphoid tissue.

> Studies examining the relationship between vaccinations and the development of atopic disorders have shown inconsistent results

A strong Th-1 response in the form of delayed-type hypersensitivity to Mycobacterium tuberculosis has been associated with relative protection against the development of atopy and allergic symptoms. A study of 867 Japanese schoolchildren found that 36% manifested atopic symptoms at some time.[27] A strong inverse association was found between positive tuberculin responses at both six and 12 years of age and atopic symptoms and IgE levels. In positive tuberculin responders the rate of current atopic symptoms was one-third the rate in negative responders. Asthma was one-half to one-third as likely in positive responders as in negative responders. Moreover, remission of atopic symptoms between seven and 12 years of age was six to nine times as likely in positive tuberculin responders. These data are consistent with the hypothesis that atopic responses are limited by Th-1 immune mechanisms. Further research is being carried out to assess the effect of M. tuberculosis immunisation in deviating immunity away from atopy.

The probable protective effect of certain infectious agents against asthma and atopy is also supported by the clinical observation of asthma and atopy remissions during infectious illnesses with viral hepatitis, measles, chickenpox and herpes zoster.[28-30]

Infant immunisation

There has been concern raised that immunisation may be contributing to the development of allergic disease, whether through reducing clinical infections in infancy[31] or by direct IgE-inducing effects of the vaccines.[32] Studies examining the relationship between vaccinations and the development of atopic disorders have shown inconsistent results.

Pertussis vaccination has been reported in two separate practices to be associated with an increased risk of diagnosed asthma or atopy.[33,34] In one report[34] the vaccination was associated with a 75% relative increase in the risk of atopic disorders.

Data from the Christchurch Health and Development study, which comprises 1 265 children born in 1977, suggest a similar effect.[35] The 23 children who received no diptheria/pertussis/tetanus (DPT) or polio immunisation had no recorded asthma episodes or consultations for asthma or allergy before the age of 10 years. In the immunised children, 23% had asthma episodes and 30% had consultations for other allergic illnesses. An important limitation is this study is the very small non-vaccinated group. It is also possible that non-atopic families were choosing not to vaccinate.

Several large studies have not confirmed these findings however. Butler and Goldberg,[24] in a study of over 13 000 children from the 1970 British birth cohort, found no association

between pertussis vaccination and wheeze at five years, but a lower risk of eczema. The later British cohort study of nearly 9 500 children born in the early 1990s[36] and a Swedish study of 9 829 children[37] have also found no association between this vaccine and asthma. Approximately half of the children from the 1970 British birth cohort study were vaccinated against measles and no substantial difference was seen in the prevalence of hayfever or eczema at age five years between immunised and non-immunised children.[24]

In New Zealand children the lifetime prevalence of asthma was increased fourfold in those children who had received antibiotics in the first year of life

Childhood exposure to a farming environment

A number of reports have suggested a lower prevalence of allergic disease, including asthma, among young people raised on farms.[38-41] These reports have raised the possibility that animal exposure and/or zoonotic infections may offer important protection against allergic sensitisation.

A study of 1 199 Quebec students showed that those raised on a farm had less asthma (odds ratio [OR] 0.59; 95% CI 0.37-0.95) and atopy (OR 0.58; 95% CI 0.46-0.75), as well as less wheeze and airway hyperreactivity.[41] This difference was most pronounced in girls and remained even after controlling for the number of siblings and current smoking.

A Finnish study of 10 667 University students confirmed a similar pattern.[11] A childhood farm environment independently reduced the risk for allergic rhinitis and/or allergic conjunctivitis (OR 0.63; 95% CI 0.5-0.79), as well as diagnosed asthma and episodic wheezing (OR 0.71; 95% CI 0.54-0.93), independent of family size. There was little to suggest that eczema is less common in farmers' children.

Children raised in farming environments might be exposed to larger quantities of allergens, toxins and irritants than their urban peers. Environmental exposure to immune modulating agents such a environmental mycobacteria and actinomycetes, favouring manifestation of a non-atopic phenotype, could explain the lower prevalence of asthma and allergic disorders in this population. There is no evidence of selection bias from atopic individuals moving from rural environments in these studies to account for the differences in allergic diseases.

Childhood exposure to pets

A major difference between rural and urban children is their exposure to livestock. For many years exposure to animals, especially 'furry' ones, was felt to be a risk factor for allergy. In fact, a protective effect has been found in relation to childhood exposure to dogs[11] and pigs[23]. Results from the European Community Respiratory Health Survey involving over 13 900 subjects, found that a dog within the home in childhood was negatively associated with adult atopy (OR 0.85; 95% CI 0.78-0.92).[11] This effect remained after adjustment for parental and sibling allergy and adult pet ownership.

A recent study of 226 school children in the USA[42] confirmed that high exposure to cat allergen was associated with decreased sensitisation. The mechanism appears to be by induction of IgG antibody to the cat allergen Fel d1. If sensitised to cat allergen however there was a significant risk of asthma in the children at all levels of exposure. The proportion of atopic children was similar in all exposure groups, arguing against the possibility that allergic families had chosen not to keep cats.

Intestinal flora and antibiotics

Studies comparing infants in Sweden and Estonia[43,44] have shown marked differences in the types of faecal bacteria found in the infants, broadly matching the differences seen between atopic and non-atopic infants in each country. Lactobacilli are present in larger numbers in the faeces of Estonian and non-atopic infants. This raises the possibility that differences in intestinal bacterial colonisation in early childhood may contribute to both the international variations and the individual risk of allergy within countries.

In New Zealand children the lifetime prevalence of asthma was in-

Large rural families are less common now than 50 years ago. Is this related to the rising prevalence of asthma?

creased fourfold in those children who had received antibiotics in the first year of life, with a dose-response relationship shown to the number of courses.[45] A retrospective review of records in a UK general practice found a doubling of the risk of hayfever and eczema among children who had received any antibiotics by the age of two years, independent of the clinical indication for the antibiotic. Cephalosporins and macrolides were associated with a greater risk than penicillins.[34] These observations may be linked to the effects of early antibiotic treatment on the bacterial colonisation of the child's gut, with antibiotics possibly resulting in a loss of the 'protective' pattern of bacterial colonisation.

Contrary to earlier opinions, both exposure to animals and early day-care have been found to protect against the development of asthma and allergy.

Conclusions

The *hygiene hypothesis*, which postulates that early childhood infection protects against atopy, is considered immunologically plausible and has been supported by a number of epidemiological observations. Family size, birth order and early childhood day-care are unlikely to be the direct determinants of allergy prevalence. Rather they are likely to be indirect measures of some other biologically relevant factor, which increases with family size and early infection, that confers protection against allergic sensitisation. The role of immunisation in altering the prevalence of allergic disease remains unresolved. So while the *hygiene hypothesis* may not be able to provide all the answers to explain the observed 'allergic' epidemic, it provides us with a new perspective on mechanisms of asthma and allergic diseases, as well as potential treatments.

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The Royal New Zealand College of General Practitioners Research and Education Charitable Trust invites applications from general practitioners for a grant to assist with research. The Trust is currently awarding one grant to the value of $3 000 three times per annum in order to promote the objectives of the Trust. In general, small research projects are considered for awarding of the grant and general practitioners who are new to research are encouraged to apply having ensured appropriate support for their initiative.

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Applications close on 24 May and 23 August 2002

Question 1
The role of T helper 1 and 2 lymphocytes in early childhood infection and allergy is
1. caused by an imbalance between the two lymphocytes populations. TRUE FALSE
2. caused by the immature (fetal) immune system preferring to produce TH1 cells in response to viral infections. TRUE FALSE
3. mediated by TH2 lymphocytes that are responsive to intracellular infections, and initiating allergic responses through recruiting eosinphils and activating mast cells. TRUE FALSE
4. a well established mechanism for causing the increased rate of childhood asthma in western countries. TRUE FALSE

Question 2
Indicate the effect of each of the following childhood infections on the possible development of asthma in later childhood (tick the relevant column for each infection).

	Increase	Decrease	Uncertain
Wild measles			
Respiratory syncytial virus RSV			
Hepatitis A			
Mycobacterium tuberculosis			

Question 3
Findings in Quebec and Finland showed that children raised in a rural environment had lower rates of asthma. These findings led the authors to present two postulates related to environmental factors. List two other postulates that might account for the same findings.
First alternative postulate: _____
Second alternative postulate: _____

Question 4
The paper summarises the literature on the topic of hygiene hypothesis. There is no presentation on the quality of the papers used, thus leaving it to you, the reader, to assess the value of the findings, both for issues such as study quality and also for the value of findings for your clinical practice. In line with this need, and referring to the section on the effect of family size on allergy/asthma (page...), assess the evidence papers as presented in the section by completing the following table. Use the reference list at the back of the paper for further information.
Note:
- *Type of paper:* was it an editorial paper; a cohort study; case studies; etc?
- *Clinical significance:* was the magnitude of the difference presented (eg reduced rate of asthma by 10%)?
- *Statistical significance:* were the numbers presented statistically significant and not just due to random chance?

Study	Type of paper	Clinical significance presented (Yes or No)	Statistical significance shown (Yes or No)
9 Von Mutius E, Clin Exp Allergy 1998			
1 Strachan DP, Br Med J 1989			
10 Strachan DP, Clin Exp Allergy 1997			
11 Svanes CJ, Allergy Clin Immunol 1999;103:415-420			
12 Ball TM, N Engl J Med 2000			
13 Wickens KL, Epidemiology 1999			

Question 5
The clinical significance and statistical significance of findings are important issues to consider when critically appraising a paper. What is another issue of importance to consider in your critical appraisal of this paper?
Issue: _____

Question 6
1. The Ball et al study demonstrated that for every additional older sibling, a child had a 20% reduction in their likelihood of having asthma. TRUE FALSE
2. These findings as presented in the paper were not statistically significant. TRUE FALSE

Question 7

The relationship between childhood exposure to household pets and the development of asthma has been demonstrated to be inverse, except in one circumstance. What is that circumstance?
_____

SUMMARY
The topic is interesting and while it is full of confounding issues, this paper points to our current difficulties explaining our relative high rate of asthma in New Zealand and the need to further study the epidemiological issues.
There is a large amount of literature available on these topics. General practitioners wishing to further look at these issues would be well advised to study the original papers quoted and their related articles. Most of the abstracts can be accessed on Medline/pubmed.

Assessing Capacity

Chris Perkins is a psychiatrist working mainly in Auckland, specialising in old age and intellectual disability psychiatry

General practitioners are sometimes requested under the Protection of Personal and Property Rights Act (PPPR Act) to report on a person's ability

- to make personal decisions about self care and to give informed consent to medical procedures (welfare)
- to manage property
- to appoint an Enduring Power of Attorney (EPOA).

The PPPR Act 'provides for the protection and promotion of the personal and property rights of persons who are not fully able to manage their own affairs'.

Its aim is 'to tread the line between overly-paternalistic forms of intervention which restrict people's rights unnecessarily and non-intervention which may leave people or their property vulnerable or open to abuse'.[1] For more information on the Act itself, refer to my article in the February 2001 issue of this journal.[2]

'For the purposes of this part of the Act, every person shall be presumed, until the contrary is proved, to have the capacity...to understand the nature and to foresee the consequences of decisions in respect of matters'.[3]

General issues

Although the GP will know about the patient's physical, mental and cognitive status, this information will not usually generate *specific* answers to competency questions. A diagnosis (such as dementia, schizophrenia or intellectual disability) does not usually shed light on specific aspects of capacity. A person will almost always need to be formally assessed.

However, the general medical background may help in other ways. For example, knowing that someone has a UTI means that assessment should be left for another day when the person's mental status is not clouded by delirium. Being aware of a person's psychosis can warn you that he might be basing judgements on delusional beliefs. Diagnosis is essential when the court needs prognostic information to determine the type of order made and possible review dates.

Steps in the capacity assessment

Step 1: Perform capacity assessment only when there are valid triggers

There is almost always some event that triggers the request for an assessment of capacity. If this is not obvious, then find out why the particular request is being made at this time. If the request is a vague one about 'assessing competence' then ask 'competence for what?'

Examples of triggers would be a request from a lawyer because the person wants to appoint an EPOA, or a family wanting to place their mother in a safe environment against her wishes. Once you know the trigger your assessment can be directed specifically towards the issue in question. This avoids unnecessary work assessing some area, which is not being questioned, and failing to address the main issue. If there is no such trigger, there is little point in undertaking an assessment. Later, when the person wants to take a legal decision, your assessment will be out of date.

Step 2: Find out about the context in which decisions are to be taken

The GP needs to have information about the background to the request. This can come from family members, other health care professionals, solicitors or financial advisors. This will form a basis for targeted questions, e.g. 'Your daughter worries that if you fall at home you won't be able to contact help... How would you manage?' You will get an idea of which values are in conflict (often safety vs independence) and can address these during the assessment. The context will inform you about the person's usual mode of functioning, attitudes and values and help determine whether the person is doing something out of the ordinary. This sounds time-consuming, but the GP can ask the person requesting the assessment to supply the necessary background information before the person is seen.

Step 3: Education

The assessor should try to make sure that the person has been told what is going on.

As we know, in gaining informed consent for medical treatment, people must be told, in language they understand, the options available, the side effects and the prognosis with and without the various kinds of treatment, *before* they are able to make a rational decision. Otherwise, ignorance can be mistaken for incapacity.

In other areas of decision-making the person needs to be informed of the risks, benefits and options in any proposed course of action, e.g. does the person know that a company such as The Public Trust could manage his affairs? Or his lawyer? Or one of his relatives? That an EPOA may be revoked or limited etc.? Ideally, this should be done by whoever initiated the assessment. However, surprisingly often, this has been omitted. You may need to contact the lawyer, social worker or family to find out what information has been given to the person, or delay the assessment until you know the subject has been fully informed.

Step 4: Involving the person

It does not make sense to ask the person to *consent* to the assessment (they may not have the capacity to consent) but the assessor needs to gain cooperation if possible. You can explain why the capacity needs to be checked, and that it will be in the person's best interests to participate. Often people are offended by the suggestion that they may not be able to make their own decisions, but will accept that it is ultimately better to document that they are competent, or have some protection if their capacity is impaired. It helps to explain that the procedure can save arguments later. You can acknowledge that the process may seem rather intrusive, but that you are only going through it because you think there are good reasons (the triggers) for checking things out.

Step 5: Make conditions of examination as good as possible

If a person has a reversible illness it is best to delay the assessment, if possible, until they are well and will perform better.

Try to minimise communication difficulties. The deaf person should wear his or her hearing aid (turned on!) Even dysphasic people may be able to communicate accurately enough for you to do an adequate interview.

The person should be seen on his or her own to avoid subtle coercion from another party. If you need someone to interpret because of speech or language difficulties, note the subject's comfort with that person and record the presence of the third party in your report.

If the person cannot communicate in some way, then for the purposes of the PPPR Act they are incapacitated, even if you suspect they could be cognitively intact.

Step 6: The assessment

It is best to start by asking open questions ('How are you managing at home?') becoming more specific ('Do you need help with the cooking?') if the person fails to answer adequately, going on to 'yes-no' answers if necessary ('Would you agree to having Meals on Wheels delivered?').

To have capacity, the person needs to understand the *context* in which a decision is to be made, to understand that he or she has a *choice* and know some relevant choices and the *consequences* of the choices.

Context

The person should be able to explain the current situation and demonstrate an understanding of the triggers, e.g. a competent person may be aware that her situation living at home is tenuous and acknowledge possible risks relating to living on her own. This compares with the person with dementia who lacks insight and believes she is coping as well as she did 20 years ago.

> To have capacity, the person needs to understand the context in which a decision is to be made, to understand that he or she has a choice ...and the consequences of the choices

Choice

The person needs to know that he or she can make a choice and what are the *personally relevant* options, e.g. stay at home alone, stay at home with help, live with daughter, move into residential care. The person needs to be aware of the context to appreciate the choices. They should be able to describe how they would pick from the choices.

Consequences

A person should have some idea of the outcome of the choices he or she identifies. Obviously this is difficult to predict, but most people can discuss what might happen, e.g. a manic person may lack capacity, failing to see the possible negative outcomes of risky spending.

Levels of competence, cultural issues and understanding of legal matters

How competent do you have to be to make a decision? The complexity of the choices and seriousness of possible outcomes varies enormously. A person might be able to agree to a simple test or treatment (such as a blood test) but not be able to understand the complexities of brain surgery. The greater the risk, the higher the level of competence required for decision-making.

The threshold for capacity should not be set too high unnecessarily depriving people of autonomy. Decision-making ability should be geared to the level of 'the common man'.

If in doubt, describe how you decided on the level when reporting.

The assessment looks at the *process* of decision-making. Different cultures have different ways of coming to decisions. You may have to check with other members of that culture. Even if the outcomes seem odd or foolish to you, the way of getting there should be understandable.

As you proceed through the assessment, you will get an idea of the person's communication difficulties and understanding of legal processes. You should note in your report whether the person would be able to understand legal documents and court proceedings and whether the proceedings would be distressing.

Specific Issues

Welfare (Welfare Guardian, Section 10 PPPR Act)

Personal care (or welfare) involves both the ability to perform the *practical* tasks of daily living, and the *cognitive* function of making decisions regarding these tasks.

Problems with the *cognitive* aspects will trigger the assessment. Someone who cannot manage the practical tasks, but is cognitively intact, will be able to modify the environment to continue coping.

Often a person with failing cognitive abilities denies problems with

practical care (the context), or when confronted with these generates inadequate responses to the problem, e.g. an older woman denies that she forgets pots on the stove thereby risking fire (context). When the problem is raised with her says it is not an issue and does not see the point of making other arrangements (failure to make choices).

Making a decision about medical treatment is a cognitive task with few practical aspects. The person needs to know what needs treating (context) and some alternative (say two) management strategies (choices). The person needs to demonstrate awareness of likely outcomes (consequences).

Property Part III

Managing property has *functional* and *cognitive* components.

The functional tasks involved in managing property are writing cheques, signing documents or going to the bank. A person with physical limitations, e.g. blindness or severe arthritis, may be unable to perform these tasks while still knowing what needs to be done. Under the PPPR Act, such a person could be seen as being 'partially incapacitated' and could have a Property Manager appointed. However, it is likely that this person would be able to appoint an EPOA to do the necessary tasks.

The cognitive components of property management are: knowing assets, debt, income and expenses or outgoings and any other obligations. The person needs to be able to make choices about what to purchase and how to invest. Ask the person what their income is (roughly), how much they spend on groceries, rent etc., what they own. Near enough answers are good enough. You may have to check the accuracy with someone else.

Making calculations, balancing income and expenses and paying the bill on time require both cognitive and functional abilities.

Different *types* of ability are relevant to different people. A businessman with a portfolio of shares will require different skills from a woman living on the pension, buying a small amount of shopping each week.

A person may adequately handle small day-to-day purchases where the financial risk is not great, but need a manager to deal with the major decisions. This person would be partially incapacitated.

An older woman agrees to sell her home to a neighbour for $30 000, not realising that the market value is now five times the price. This triggers an application for a property manager when the family discover what is happening.

The procedure is to check that the person knows the *context*, including the trigger problem, (What is the value of the house? Might the family want to buy it?) can make reasoned *choices* (Why selling at this time to this particular person? Would it be better to get a valuation? Sell via a land agent?) and be aware of possible *consequences* (Is there a possibility that she is being cheated? Where will she live when the house is sold; what will she do with the money?).

> The threshold for capacity should not be set too high, unnecessarily depriving people of autonomy

Enduring Power of Attorney

If there is any doubt as to the person's competence, it is prudent to assess him/her, before signing the EPOA, although law does not require this.

A person may be unable to make decisions in several of the above areas yet still be able to grant a power of attorney to someone they trust.

The person needs to understand that an EPOA can be specific or general, for property or welfare. An EPOA will be activated when the person becomes incompetent. It can be revoked at any time while the person is competent. The person should know who are potential attorneys and explain why he or she is choosing one person over the other. You need to be alert to possible coercion, especially when a property attorney is being appointed.

Although the Act does not specifically require this, you may be asked to decide whether the person has become incompetent so that the previously appointed attorney should take over the management of the donor's affairs. The assessment of the area under question (e.g. property) is as above.

There will be occasions when even with excellent information and careful assessment you still cannot decide whether the person is competent or not. People with frontal lobe damage are often tricky as they present with apparently adequate knowledge, good verbal skills but poor judgement and insight. Difficult cases can be referred to an expert: psychiatrist, psychologist or geriatrician. It is always worth recording your findings and the source of your dilemma, as this may be valuable information at a later date.

Key points

- Although the GP will know about the patient's physical, mental and cognitive status, this information will not usually generate specific answers to competency questions.
- The person should be seen on his or her own to avoid subtle coercion from another party.
- There will be occasions when even with excellent information and careful assessment you still cannot decide whether the person is competent or not.

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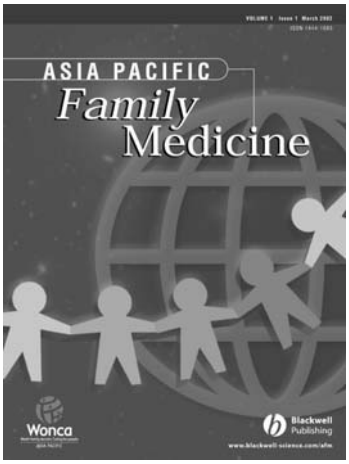

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Interpretation of an elevated serum ferritin

Leanne Berkhan is a haematologist with a special interest in lymphoma and myeloma and CLL. She is currently working for Diagnostic Medlab in Auckland.

The interpretation of an elevated serum ferritin requires consideration of several separate disease categories. These come under the broad headings of:

- Iron overload
- Acute inflammatory conditions
- Liver disease
- Alcohol excess

Causes of iron overload

Primary

- Hereditary haemochromatosis
- Hereditary aceruloplasminemia (Wilson's disease)

Secondary

- Transfusion overload
- Excess dietary iron
- Porphyria cutanea tarda
- Ineffective erythropoiesis (Sideroblastic anaemia, Thalassemia)

Causes of high serum ferritin without iron overload

- Liver disease – non-alcoholic hepatitic steatosis (NASH)* or viral hepatitis (B/C?G)
- Alcohol excess*
- Chronic inflammatory conditions
  - Rheumatoid arthritis, inflammatory bowel disease
  - Bacterial infections
- Malignancy especially haematological
- Thyrotoxicosis
- Familial hyperferritinemia and cataract syndrome

* *Can have iron overload in certain settings*

The most sensitive method for predicting whether the elevated serum ferritin represents iron overload due to haemochromatosis is the transferrin saturation. A transferrin saturation of >60% in males and >50% in females has a sensitivity of >90% for iron overload.[1,2] If the transferrin saturation is elevated on more than one occasion then testing for the common mutations of the HFE gene is indicated in Caucasian patients.

Try to test patients when they are otherwise well and avoid screening tests for haemochromatosis if a patient is acutely unwell. If the patient is sick, the serum ferritin may be *misleadingly high* as it is an acute phase reactant. Conversely the serum transferrin saturation *falls* during acute illness and therefore may mask the presence of iron overload. If a high transferrin saturation is unexplained a fasting sample may be useful as iron saturation can be affected by a high iron meal.

Hereditary haemochromatosis

The most common cause of iron overload is mutation of the HFE gene, by the substitution of tyrosine for cysteine at amino acid 282. Homozygosity for the C282Y mutation is found in 85–90% of patients of Northern European origin who have typical hereditary haemochromatosis and results in absence of the HFE gene on the cell surface.

There is high prevalence of this mutation with 10–14% C282Y heterozygosity rates and 0.5% homozygosity amongst Caucasians. Homozygous patients have a 50–75% chance of developing iron overload. Heterozygotes are unlikely to develop the disease in the absence of other risk factors for iron overload but can transmit the gene mutation to their children. Fifteen to 20 per cent of the patient population is heterozygous for a different mutation resulting in the substitution of aspartate for histidine at amino acid 63 termed H63D. This mutation alters the binding affinity for the transferrin receptor and does not usually contribute to increased iron overload in the absence of the C282Y mutation. Patients heterozygous for both C282Y and H63D mutations are termed heterozygotes and can develop haemochromatosis.

Patients heterozygous for either C282Y or H63D mutations can develop iron overload in the setting of alcohol excess, non-alcoholic hepatic steatosis or porphyria cutanea tarda. Other mutations involving the transferrin 2 receptor and ferroportin are termed HFE 3 and HFE 4 respectively. Juvenile haemochromatosis (HFE2) is an autosomal recessive disorder also and involves mutation of chromosome 1q. Affected children have a profound defect in regulation of intestinal iron absorption, and develop symptomatic haemochromatosis in their early 20s.

Clinical manifestations of hereditary haemochromatosis can be grouped as early or late.

Early

- Asthenia
- Arthralgia
- Elevation of serum transaminses

Late

- Hepatomegaly
- Cirrhosis and hepatoma
- Diabetes
- Arthritis of the 2nd and 3rd MC P joints 'painful handshake'
- Cardiomyopathy
- Pigmentation
- Impotence

Patients with a diagnosis of hereditary haemochromatosis genotype must therefore have serum glucose and liver enzymes checked on a regular basis. If there is hepatomegaly, elevation of the liver enzymes or the serum ferritin is greater than 1 000 ug/L then a liver biopsy to exclude liver cirrhosis is indicated.[3] If cirrhosis is present the patient requires screening for hepatocellular carcinoma at regular intervals.

Liver biopsy

A liver biopsy should be considered if the patient has an unexplained high ferritin especially in the setting of high transferrin saturation. The pattern of iron distribution in HH is periportal and hepatocytic rather than predominantly in the Kuppfer cells. Liver biopsy provides the hepatic iron concentration – a semiquantitative evaluation of iron excess. A value greater than 1.9 is very suggestive of HH. Liver biopsy frequently detects associated lesions such as steatosis.

Management of haemochromatosis

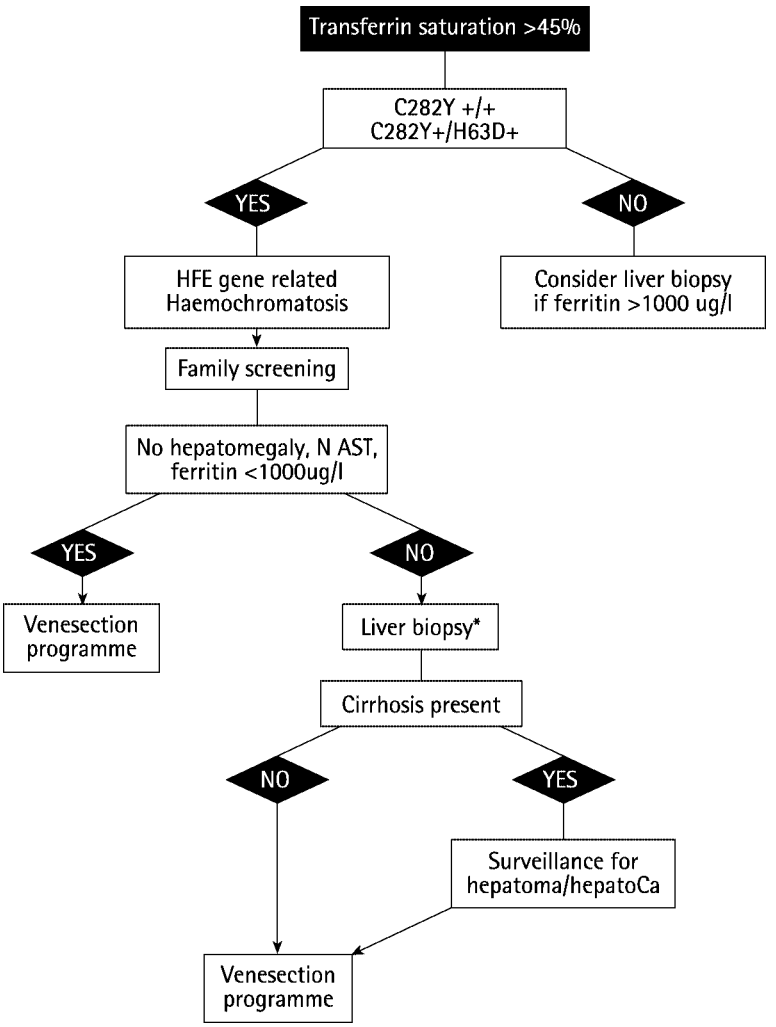
Venesection

Patients with elevated serum ferritin and HFE mutations C282Y +/+ or C282Y+/H63D+ should be referred for venesection. The goal of venesection is to reach and then maintain a serum ferritin at the lower end of the normal range, usually 50 ug/l. This is achieved by initiating 400–500 mL venesections on a weekly basis and continuing until the goal ferritin is reached. The frequency or volume of venesections are reduced if the patient does not maintain a normal haemoglobin or has difficulty tolerating the procedure. Once the patient has achieved the desired ferritin level then maintenance (3–6 monthly) venesections are scheduled.

Other than in the patient with juvenile haemochromatosis venesections are not recommended to commence before 18 years of age in view of the importance of iron in childhood and adolescence

Blood from haemochromatosis patients can be used by the New Zealand Blood Service for transfusion provided the patient fulfils all their usual criteria for safe blood donation. A study of patients with haemochromatosis undergoing venesection at a hospital clinic found 40% fulfilled criteria for blood donation.[4]

Figure 1. Guidelines for management of hereditary haemochromatosis[5]



Expectations of the venesection programme

Life expectancy returns to normal provided neither diabetes nor cirrhosis were present at the time of diagnosis. Specific symptoms respond variably.

Improvement likely: asthenia, skin pigmentation, liver enzymes

Improvement possible: diabetes, non-cirrhotic fibrosis, arthralgias

No improvement: cirrhosis is irreversible. Hepatocellular carcinoma can still develop in cirrhotic patients

despite iron overload reversal by venesection.

There is a national support group for haemochromatosis, IRONZ, which is supported by the Leukemia and Blood Foundation.

Family screening is indicated of C282Y positive proband.

Homozygous C282Y are at high risk of developing disease.

Heterozygotes will likely not develop the disease but can transmit to their children.

Due to the high prevalence of the mutation of the HFE gene, the probability of a heterozygote marrying another heterozygote is 10%.

Phenotypic screening should precede or accompany gene testing.

Dietary issues

Alcohol (>60 g/day) has been shown to exacerbate liver damage due to iron overload.

Avoid taking vitamin C when eating foods high in iron such as red meat. Tea with meals is felt to be beneficial as the phytates in tea bind iron.

Hereditary aceruloplasminemia

Hereditary aceruloplasminemia (Wilson's disease) is a rare disorder due to a mutation in chromosome 3 which causes marked hyperferritinemia as well as copper overload. Aceruloplasminemia mimics HH as it is familial and can cause hepatic iron overload and diabetes. It is, however, associated with neurologic abnormalities such as dementia, cerebellar ataxia which are not seen in HH. It can be distinguished from HH by a low serum transferrin saturation and an undetectable serum ceruloplasmin concentration.

Secondary iron overload

Iron overload secondary to multiple blood transfusions or haematological conditions such as sideroblastic anaemia are usually self-evident and do not present a diagnostic problem. Management is more difficult as venesection is not appropriate. Desferroxamine is given as a subcutaneous infusion 8–12 hours/day to remove excess iron particularly in transfusion dependent thalassemic patients.

Porphyria cutanea tarda is usually manifest as cutaneous photosensitivity and hepatic iron overload and is diagnosed by an increased urinary and faecal porphyrin excretion. Management includes venesection and avoidance of alcohol, exogenous eostrogen and certain drugs.

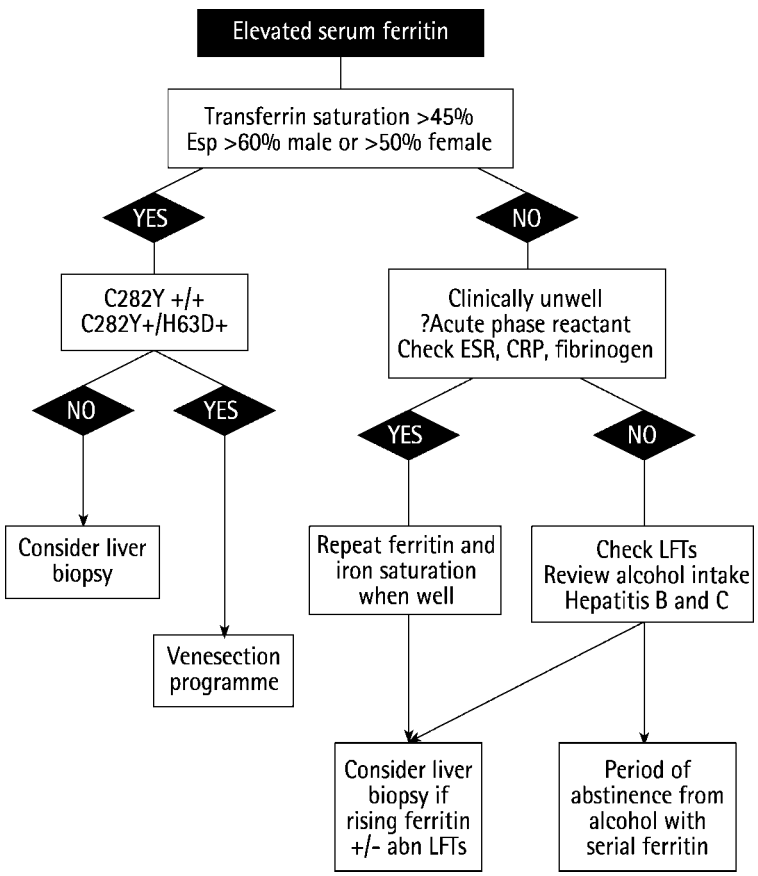
Due to the high prevalence of the mutation of the HFE gene, the probability of a heterozygote marrying another heterozygote is 10%

Excess dietary iron as a cause of secondary iron overload classically refers to inhabitants of sub-Saharan Africa who consume a traditional fermented beverage brewed in iron cans that is rich in iron. This condition is distinctive on histological grounds from alcoholic iron overload and HH.

Alcohol

It is known that the regular consumption of alcohol is responsible for the disruption of normal iron metabolism in humans, resulting in the excess deposition of iron in the liver in approximately one-third of alcoholic subjects. The mechanisms involved are largely unknown; however, it is likely that the two major proteins of iron metabolism, ferritin and transferrin are intimately involved in the process. The elevation of serum ferritin caused by alcohol excess can occur without elevation of other liver enzymes often

Figure 2. Guideline for the investigation and management of hyperferritinemia



falls dramatically with abstinence from alcohol.

Increased ferritin without iron overload

Steatohepatitis

Increased ferritin with normal transferrin saturation is frequently found in patients with hepatic steatosis. The elevated ferritin is thought to be due to the combination of disrupted glucose, lipid and iron metabolism. The elevated ferritin reflects iron overload only in those patients in whom it persists despite an appropriate (diabetic) diet.[6]

Viral hepatitis

Acute hepatitis secondary to viral infection with hepatitis A, B, C, EBV, and CMV will cause an elevation in serum ferritin indicative of the liver inflammation but not iron overload. Chronic infection with hepatitis C or B may be less obvious clinically and serologies should be checked even if there is only minimal disturbance of liver enzymes in cases of unexplained hyperferritinemia.

Inflammatory conditions

Patients with autoimmune inflammatory diseases, such as SLE and rheumatoid arthritis commonly have an elevated serum ferritin which more likely reflects disease activity, especially in the case of SLE, than iron status.[7] Where the patient is anaemic the serum ferritin is an unreliable guide to the patient's iron status. The soluble transferrin receptor is a more reliable guide to the presence of iron deficiency than the serum ferritin because of its dual role as acute phase reactant. Unfortunately the soluble transferrin receptor is not available as a routine test.

Active infection will also be associated with an elevated serum ferritin in the absence of iron overload. An elevated CRP or ESR should alert you to these possibilities in patients with occult inflammation.

Heavy exercise as in ultramarathon running can cause an elevated serum ferritin amongst other acute phase reactants.[8]

Malignancy is also an important cause of an acute phase reaction but is unlikely to manifest as an isolated elevation of serum ferritin in the absence of other clinical signs or laboratory abnormalitites.

The serum ferritin is elevated in thyrotoxicosois.

Familial hyperferritinemia and cataract syndrome is a rare disorder which is not associated with iron overload. Affected family members do require ophthalmology assessment and cataract removal.

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How the professional mentor works

Paradigms and our thinking as GPs – example: anxiety and panic

Peter Parkinson

Dr Peter Parkinson is a GP, a physician and a psycho-dramatist. He is responsible for establishing a 100-strong nationwide network of 'Professional Mentors' for GPs. This network, that can be accessed through 0800 MENTOR or www.mentor.co.nz, was described in the April 2001 issue of NZFP (NZFP 2001; 28[2]:34–35). It may seem bizarre that sitting together with another human being for an hour per fortnight can affect one's own well-being and improve perceived effectiveness of consultation so profoundly. In this and perhaps subsequent articles Peter will begin to unravel some of the intricacies that underly the magic of such human interaction.

Introduction

One hundred and fifty-three GPs, all of whom were attending to their own professional development and personal well-being using different processes, answered a fairly casual questionnaire. I designed this questionnaire to give those of us who were involved in developing the professional mentoring programme for GPs some idea about the effectiveness of these processes and to gain direction in planning for the future of professional mentoring. In other words, should we ditch it or continue it. The results were positive enough for us to continue.

Of particular interest, however, was the way that professional mentoring stood head and shoulders above other disciplines and processes, such as GPVTP, Peer groups, IPA groups, psychotherapeutic supervision etc. especially when it came to the four questions that related to patients. These were the four questions: Did the process you were using,

- increase work fulfillment?
- noticeably help patients?
- expand appreciation of health and disease?
- expand repertoire of interventions?

We reflected on the many ways that this may have come about. One thing was certain: the results did not come from a new drug, a novel surgical procedure or a souped up vaccine, for these have nothing to do with professional mentoring. We believe that it comes from the less tangible, less measurable factor: the increase in effectiveness of the inter-personal relationship between doctor and patient. Of the many, mentor-borne, factors that we believe could improve the outcome of the doctor/patient relationship, paradigm shift was high on our list.

What is a paradigm?

A paradigm is a way of perceiving something. It is a way of charting the ocean that one is in. If one consults a chart of the 'Approaches to Auckland' to enter the Port of Sydney one might end up on the rocks. Wrong paradigm!

The professional mentor is a person able to assist you to consider a variety of paradigms in order to give a better understanding and a greater sense of meaning to a clinical or human situation that is in front of you.

A paradigm is a theoretical explanation and as such it is not the truth. A paradigm adds depth to meaning, and, once it has done its job, will either be disbanded or else included in the next stage of development of the paradigm. Taking the map of Sydney Harbour simile further, having consulted the correct

chart and with the compass to have plotted a safe course into port, the novice captain finds his boat on the rocks! This novice captain needs to review his/her choice of paradigm. Tides eh?!

The paradigm that we, as doctors, use constantly is 'diagnose and cure', or, more simply, 'cops and robbers'. The disease is the robber of health and along come the cops (the doctors) with their guns (interventions) and hand cuffs (band aids) and kill, or at least imprison, the suspect until it gets a fair trial (investigation) and conviction (diagnosis). This paradigm comes horribly unstuck when the illness happens to be a feeling. Let's consider anxiety and panic.

Anxiety and panic

Simply calling a feeling an illness does not really solve anything. The robber of health and good feeling (anxiety and panic) multiplies, the potentially lethal drugs for killing the feeling proliferate and dependency on these drugs becomes a risk and a reality. It does keep the consultation brief and may reduce risk. But this is clearly incomplete, so let's try another paradigm:

'The feeling is big because the ability to respond is small.'

This is a paradigm that assumes that feeling and action work hand-in-hand. Let me give you an example that is simple enough to understand. Recently I was taking my rather large dog on a leash across a busy road, and I was a safe distance in front of an approaching Stagecoach bus. The feeling was big enough to prompt me into appropriate action, hence I kept walking at a steady pace. At the worst possible moment the dog spooked and attempted to backtrack, causing both of us to come to a dead (or potentially dead) halt in front of the oncoming bus. On losing the ability to act appropriately, my anxiousness escalated to panic. The dog found itself in my armpit as I snatched him bodily and ran with him to the other side of the road. Once on the pavement the panic vanished, I spoke to the dog in Anglo-Saxon, then I experienced the beauty that comes with the sea breeze and the view.

This paradigm, 'big feeling, secondary to small action', has lots of mileage. It means that the focus can be taken off ameliorating the feeling and focused on the patient's ability to respond.

The next paradigm shift is logical. *To what does the patient needs to respond?* Hence the paradigm expands now to include not only the relationship between feeling and action, but also the context. It may be quite simply achieved by asking the patient.

The paradigm that we, as doctors, use constantly is 'diagnose and cure', or, more simply, 'cops and robbers'…This paradigm comes horribly unstuck when the illness happens to be a feeling

I asked my chemist friend this the other day, why he was extremely anxious. He said: 'I've been burgled twice in the last fortnight. Both times my life was threatened. I've been to the psychologist who specialises in post-traumatic stress disorder and he hasn't cured the extreme anxiousness that bugs me every day when I come to work.' I mentioned the above paradigm to him. Next time I dropped in to see him there was hardened glass, a concertina security door and bank counter wires separating him from the public part of the shop. He looked at me, pointed to his armourment and said: 'The panic's gone. Now I feel secure!'

If the patient says: 'I don't know what makes me anxious', then the paradigm runs out of steam. Time to invent a new one? Try adding this one to the paradigm sequence: *Something or someone hit one of the patient's triggers or 'buttons' and sparked off a conditioned response reminder of an old and very threatening moment.* You may thus ask the patient: 'Have you been reminded of a threatening moment?' You might get yes, and a chat about that could do wonders, or a visit to the psychologist mentioned above might also be very beneficial. It could also be valuable for the patient to know about this paradigm as a preferable alternative to the paradigm of being insane.

Again, alas, you might draw a blank and most of the time it's not to ask such a simple and straightforward question. Hence another paradigm could be considered, *that there are two separate memory systems.*

One is intellectual and contains the denial processes that keep untoward, unwanted and severely traumatic memories out of consciousness. The other memory system is that sparked off through action and emotional warm-up. In reality this one tends to access appropriate moments with alarming accuracy. It, too, has many safeguards, because many of our experiences are best kept well out of conscious memory. When the moment is right, and only when the moment is right, this pathway can lead to very significant treasures that lend exceptional insight into the most bizarre of happenings.

One lady who presented with panic attacks for no known reason chose to use the security of psycho-dramatic process and a personally selected group of support people in a facilitated group setting. In that setting of relative safety, she re-entered a panic experience. Once she was embedded in that feeling she closed her eyes and looked and listened. She saw pine trees and heard the sound of the wind passing through the branches. This was the scene where she was the victim of an early adolescent rape. Part of the safety and the purpose of entering this painful recall is because she knows that she will be able to resolve

the issue there and then. Once this had emerged she could see exactly where the panic that surged from unknown depths through her day-to-day activities had come from. She became furious with the perpetrator, something that she was unable to do at the time of the assault.

Thanks to the generosity, training and spontaneity of the actor who was taking the perpetrator's role, and to the safety of the psychodramatic process, she was able to deliver very clear consumer feedback to 'the perpetrator'. During the original assault the 'feeling was big, because the ability to respond was not just small, but absent'. In fact the feeling got so big that it went clean off the scale into denial. (That's another paradigm.) In this psychodrama she had been able to respond appropriately to the circumstance that caused the panic and feel empowerment instead. From there on in her life the conditioned response reminders (the triggers and buttons) recalling this scene were no longer panic ridden but contained the experience of power that occurred in the psychodrama.

Altering and choosing paradigms permits a wider range of options, from quick fix to deeper comprehension and permanent resolution

For the GP is it useful to have an array of paradigms to consider? Without a paradigm range we are left with the paradigm of cure either by medication or referral. The paradigm range mentioned above adds the freedom of choosing personal empowerment as an option for your patient. Together with your patient you will be able to discuss the wider array of paradigms, and how referral to a psychotherapist or psycho-dramatist may work.

Conclusion

In simply reviewing anxiety and panic as a patient's presenting concern we have considered the following paradigms:

- Cops and robbers
- The feeling is big because the ability to respond is small
- Feeling, action, thoughts and circumstance all work hand-in-hand
- The cause of the anxiety could be in the here and now
- Painful memories are kept well hidden
- Painful feelings of the past can affect the present by conditioned response recall
- Two separate recall of memory pathways; the intellectual and the emotional
- Discovering the origin of the anxiety might help by giving insight
- Completing the unfinished moment where one could not act earlier in life is a satisfying thing to do and cures flashbacks.

This wide array of paradigms, and the freedom to think up more on the spot, gives the patient a much better chance of having their presenting complaint comprehended in terms that makes sense to them and empowers them to take control of their own life.

Altering and choosing paradigms permits a wider range of options, from quick fix to deeper comprehension and permanent resolution. It is important for the clinician to remember that diagnosis is part of an alternative paradigm system, for what is the difference between 'being anxious', from 'being really anxious' and from having the diagnosis 'Anxiety Disorder NOS, DSM IV 300.00'.

Multi-paradigm approaches may take more time, however, as one client recently said to me, 'If you do not have the time to do the job properly, what makes you think that you will have the time to do it again?'

GP's photo talents earn $500 – yours could too

The first winner in NZFP's photography contest has been announced, but there's still plenty of opportunity for snap-happy GPs (or anyone else) to win themselves $500.

Dr Peter Allen of Northland is the first winner, with his photo of a toy figure relaxing amidst an avalanche of pills featuring on the front cover of this issue.

Dr Allen wins $500, but there are still five other $500 prizes to be won. Entries were to close in April this year, but have now been extended till December to allow busy GPs the chance to be creative.

"What we want is pictures of general practice, GPs, their staff and patients," explains NZFP editor Professor Campbell Murdoch. "We need both visually spectacular shots, which might make a cover illustration, but also the more everyday pictures illustrating the work of general practice."

Photographs don't have to be of people, though Professor Murdoch says the journal is particularly keen to receive these. "If there's a person in the photograph, we need a signed 'release' from them - just a simple statement that we're allowed to publish the photograph".

Anyone can enter. "GPs, practice staff, even patients can send in photos," Professor Murdoch says, "as long as they reflect some aspect of general practice."

Dr Peter Allen

Entries, which become the property of NZFP, should be sent to PO Box 10-440, Wellington.

Cochrane Corner

At last an effective treatment for heavy menstrual bleeding

A review of the Cochrane review and the New Zealand guideline on the management of heavy menstrual bleeding

Associate Professor Bruce Arroll, Department of General Practice and Primary Health Care, University of Auckland

This review should be cited as: Lethaby A, Farquhar C, Cooke I. Antifibrinolytics for heavy menstrual bleeding (Cochrane Review). In: The Cochrane Library, Issue 4, 2001. Oxford: Update Software and Guidelines for the management of heavy menstrual bleeding (www.nzgg.org.nz).

Two of the NZGG writers were also the first two authors on the Cochrane review on fibrinolytics. The guidelines can be downloaded from the NZGG site but may require an update of your winzip file.

For access to the Cochrane site as a member of the RNZCGP see the end of this article.

My initial reaction to the publication of the New Zealand Guidelines Group (NZGG) Management of heavy menstrual bleeding was one of horror. For almost 20 years I had been using a therapy that was ineffective, namely luteal phase progestagens. What was effective was oral progestagens from Day 5 to 25; much longer than I had been using. The NZ guidelines also mentioned a progestagen containing intrauterine device (Mirena) which is available through some hospital Obstetric and Gynaecology clinics. I also learnt that there was a medication that was specialist only at the time of publication and that NSAIDs were equally as effective. The medication concerned is tranexamic acid (Cyklokapron) which only needs to be taken during days of heavy menstruation. Heavy menstrual bleeding is defined as more than 80 mLs/cycle. In the NZGG guidelines there is a diagram which can facilitate an estimation of cycle volume (Figure 6.1). Since January 1st 2002 tranexamic acid is fully funded for prescription by general practitioners.

The Cochrane review

Heavy menstrual bleeding (HMB) is an important cause of ill health in women. In New Zealand it is estimated that 2.3% of GP consultations for women less than 50 years are for heavy menstrual bleeding. Medical therapy, with the avoidance of possibly unnecessary surgery, is an attractive treatment option. A wide variety of medications are available to reduce heavy menstrual bleeding but there is considerable variation in practice and uncertainty about the most appropriate therapy. Plasminogen activators are a group of enzymes that cause fibrinolysis (the dissolution of clots). An increase in the levels of plasminogen activators has been found in the endometrium of women with heavy menstrual bleeding compared to those with normal menstrual loss. Plasminogen activator inhibitors (antifibrinolytic agents, i.e. tranexamic acid) have therefore been promoted as a treatment for heavy menstrual bleeding. Eighty per cent of women treated for menorrhagia have no anatomical pathology and over a third of the women undergoing hysterectomies for heavy menstrual bleeding have anatomically normal uteri. Hence medical therapy, with the avoidance of possibly unnecessary surgery, is an attractive alternative.

All studies which might describe randomised controlled trials of antifibrinolytic therapy for the treatment of heavy menstrual bleeding were obtained by electronic searches of electronic databases including the Cochrane Controlled trials register (now regarded as the best source of randomised controlled trials). The review selected papers which were randomised controlled trials in women of reproductive age treated with antifibrinolytic agents versus placebo, no treatment or any other medical (non-surgical) therapy for regular heavy menstrual bleeding within either the primary, family planning or specialist clinic settings. Women with post menopausal bleeding, intermenstrual bleeding, iatrogenic or pathological causes of heavy menstrual bleeding were excluded.

Results

Tranexamic acid compared to placebo showed a significant reduction in mean blood loss of 94 mLs/cycle with the 95% confidence interval from 151.4 mLs to 36.5 mLs. Tranexamic acid was compared to two other medical (non-surgical) therapies: mefenamic acid and norethisterone administered in the luteal phase. In all instances, there was a significant reduction in mean blood loss. Change in the quality of life measures, flooding and leakage and sex life, were significantly improved in the tranexamic acid group when compared to the oral progestagen group. These findings are based in most cases on only one trial. This treatment is not associated with an increase in side effects compared to placebo, NSAIDS or oral luteal phase progestagens.

Safety

As these medications slow the breakdown of clots, there has been concern that antifibrinolytic agents may have an associated increased risk of thrombogenic disease (deep venous thrombosis). Long term studies in Sweden, however, have shown that the rate of incidence of thrombosis in women treated with tranexamic acid is comparable with the spontaneous frequency of thrombosis in women. There are no data available within randomised controlled trials which record the frequency of thromboembolic events.

Clinical bottom line

For women who are not at high risk of endometrial cancer (see NZGG for how to assess this) then tranexamic acid, the Levonorgestrel intrauterine system, non-steroidal anti-inflammatory agents (menstruating days only), oral contraceptive pill (Day 5–25) and long courses of high dose norethisterone (Day 5–25) are all effective treatments for heavy menstrual bleeding. The good news is that tranexamic acid is now fully funded on a GP prescription.

References

References are available from B Arroll or from the Cochrane library.
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For the access codes to the Cochrane library contact Cherylyn Pearson cpearson@rnzcgp.org.nz at the College.

The Royal New Zealand College of General Practitioners
Research and Education Charitable Trust

Norman Mathias Prize
$1,000

The Norman Mathias Prize has been donated by Dr Joan Chappell in memory of her late husband, Alfred Norman Mathias. Dr Mathias was a general practitioner in England and active in NHS and BMA committees. He was also Medical Officer to General Electric where he did significant work on the toxicity of mercury. He and his wife emigrated to Christchurch, New Zealand, in 1970 where they both continued in general practice. At the time of his death he was a member of the Council of the NZMA.

Topic
Some aspect of the environmental and ecological health of earth and its effect on the future of the human race

Rules
1. The essay is not to exceed 5 000 words and will become the property of the RNZCGP to use as it thinks fit.
2. The competition is open to all general practitioners and general practice trainees.
3. The judges' decision will be announced in September 1997 and the award formally made at the 2002 RNZCGP conference.
4. The winning essay will be published in the New Zealand Family Physician.
5. The essay is to be submitted by Friday, 26 July 2002 to:
   Norman Mathias Prize
   RNZCGP Research and Education Charitable Trust
   P O Box 10440, Wellington 6036

Philosophy in general practice

The concept of recognition

Dr Peter Woolford

In researching a paper for a masters programme I talked to Dr Simon Cotton, trying to get an insight into general practice from the perspective of a senior GP whose experience bridges 50 years.

I was interested in the patients' expectations of their doctor and whether these expectations had varied over time.

Simon also referred me to the book *A Fortunate Man* by John Berger and Jean Mohr.[1] It is the biography of a British GP working in an impoverished rural area.

This book awakened me to the concept of recognition, and it is this that I wish to explore in this paper.

I am not a philosopher, but a common coal-face GP, doing what GPs have done for years. We take a basic medical education and add to this practical experience.

This practical experience comes from the patients we see every day. Through them we have the opportunity to learn about shared human experience. From this we may also learn about ourselves; our responses to the world, and our place in that world.

> Wisdom requires the integration of skill and knowledge with understanding of lived life

The important point here is that what sets general practice apart from the rest of medical practice, is that we are the only ones in a truly life long relationship with our patients.

I observe that there are two stages in a doctor's professional life.

The first is the learning – learning the medicine, disease process, facts, diagnoses, and the specific treatments associated with this. One is required to become very skilled and very knowledgeable. The focus is on the acquisition of skills and theory. However, knowledge is not synonymous with wisdom. Wisdom requires the integration of skill and knowledge with understanding of lived life.

The second stage involves the doctor transcending to a point of *recognition*.

This recognition requires the recognition of the patient as a person and the recognition of the doctor as a person and the interaction between the two. In general practice this translates into a profound respect for the doctor/patient relationship. Recognition does not merely involve seeing the patient in a whole sense, but also involves recognition of the doctor as a whole person and the appreciation of the process that occurs between them.

The doctor and the patient share this experience, and the sense of connection allows the patient, slowly and by degrees, often subconsciously, to explore their symptoms in a way that involves the whole experience, rather than just as physical symptoms.

> When a doctor transcends to recognising their own and their patients' humanity they become a healer, as well as a doctor

Both the doctor and the patient are enlightened and enriched by the intimate process of personal discovery.

This recognition is a state qualitatively different from the 'psycho/social/family/physical' model. The psycho/social/family/physical concept has been a major advance, but is limited by the fact that it still views the patient as a passive recipient of services that are provided across a broad spectrum of modalities. Certainly it takes into account most areas of human experience that influence health. But the implication is that if one takes cognisance of these areas for a patient (not including the doctor) then the correct diagnostic formulation can be generated and necessary treatments identified and implemented and the patient will be well.

This has nothing in common with the concept of recognition, which is about shared experience, connectedness, empathy and mutual respect.

When a doctor transcends to recognising their own and their patients' humanity they become a healer, as

well as a doctor. There is a shift from knowledge to wisdom. The focus is on valuing the richness and strength embedded in the shared human experience. It is not about illness but about wellness and wholeness. Even when a person is terminally ill the focus is on the human potential encompassed by the whole experience of life and death. Through the sharing of the pain, distress and grief the GP can discover personal resilience alongside the patient and the patient's family. By this process everyone experiences that they have 'gained' something in a situation traditionally considered one solely of 'loss'. During this journey the doctor is not expected or required to 'know everything'. They are expected to share their scientific base, to the extent that it is useful, but more importantly they are there to share their human understanding.

Interestingly, in my experience, doctors define as 'great', those doctors who strive to be perfect. Doctors who have a huge body of knowledge, who are utterly dedicated to their work and who aim for perfection in all their endeavours.

There are doctors who have influenced our thinking, made huge advances in our understanding of disease, therapeutics, and teaching.

We have been taught to consider these 'great' doctors.

They may be 'good' doctors from a patient perspective as well, but not necessarily. I believe patients view their doctor as 'good' if they are evidently human and by definition 'not perfect'. Patients value the real relationship.

For patients, the 'good' doctor recognises the common frailty and the humanness within each person and develops empathy and respect for every person.

Only by acknowledging and living this can one be a truly 'good' doctor for the patient.

For patients, the 'good' doctor recognises the common frailty and the humanness within each person and develops empathy and respect for every person

However the acknowledgement and acceptance of frailty, by its very nature, militates against a doctor being 'perfect' or omnipotent.

The very act of recognising patients and by definition recognising oneself is a humbling process.

It is a levelling of the playing field across the human condition. This process is very personal, has an immeasurable quality and is fundamentally satisfying.

This type of relationship between doctor and patient is one of general practice's best-kept secrets.

Doctors who recognise their patients may still make mistakes and miss diagnoses. No one can be perfect no matter how hard they strive to be.

But I postulate that the impact is more tolerable, as the patients recognise themselves in the doctor, because the doctor has recognised himself/herself in the patient, and all are participants together.

I also postulate that doctors who recognise patients and themselves as people, are more likely, although not exclusively, to come from general practice. GPs have the ongoing long term contact with patients through thick and thin, and most specifically, ongoing contact and care when medical treatment has 'failed'.

It not only fails the patient, but also the doctor, who has until then based her/his whole working relationship on the implicit promise of treatment and cure.

When treatment fails, the GP must find another way to be in relationship with the patient.

The GP, after many such experiences, may re-examine his or her philosophy of care. The GP may realise that the basic tenet of cure is untenable, and discover instead the extraordinary experience of sharing the human process of living. Birth, joy, resilience and success are as integral as pain, suffering, weakness and dying.

This then becomes the basis of what constitutes the 'philosophy' of general practice, and what sets it apart from other branches of medicine.

Acknowledgements

Dr Simon Cotton and Dr Debbie Antcliff.

Reference

1. Breger J and Mohr J. A fortunate man. Penguin 1969.

Journal Review Service

Continuing Medical Education in General Practice from the Goodfellow Unit

Journals reviewed in this issue

Am Fam Physician*
Am J Sports Med*
Aust N Z J Surg*
Br Homeopath J*
Br J Sports Med*
Can Fam Physician*
Intern Med J*
J Fam Pract*
JAMA*
Obstet Gynecol*
Postgrad Med*
Prim Care*
Sci Am*
*Journals indexed in Index Medicus

Alcohol and Substance Abuse

22-001 Validation of a single screening question for problem drinking.

Williams R, Vinson DC. J Fam Pract. April 2001. Vol.50. No.4. p.307-12.

Reviewed by Dr Bruce Adlam

Review: This study hoped to confirm the sensitivity and specificity of a single screening question for problem drinking: 'When was the last time you had more than X drinks in one day?', where X=4 for women and X=5 for men. This was a cross-sectional study of adult patients presenting to three emergency departments within 48 hours of an injury. The answers to the question were coded as never, more than 12 months ago, three to 12 months ago, and within the past three months. Considering 'within the last three months' as positive, the sensitivity of the single question was 86%, and the specificity was 86%. In men (n=1432), sensitivity and specificity were 88% and 81%; in women, 83% and 91%. Conclusion: A single question about the last episode of heavy drinking has clinically useful sensitivity and specificity in detecting hazardous drinking and alcohol use disorders (see 22-002 for the commentary).

Comment: This is the type of question that could easily be informally introduced into a patient consultation.

22-002 In search of the Holy Grail for the detection of hazardous drinking.

Fleming MF. J Fam Pract. April 2001. Vol.50. No.4. p.321-2.

Reviewed by Dr Bruce Adlam

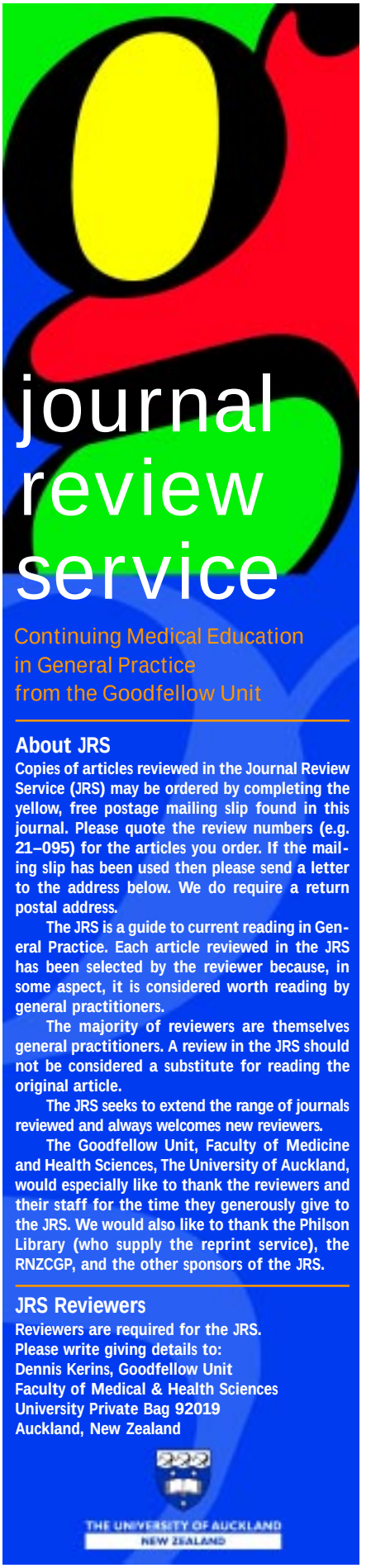
Review: See 22-001 and 22-003.

22-003 Three questions can detect hazardous drinkers.

Gordon AJ, Maisto SA, McNeil M, et al. J Fam Pract. April 2001. Vol.50. No.4. p.313-20.

Reviewed by Dr Bruce Adlam

Review: This study evaluated the Alcohol Use Disorders Identification Test (AUDIT) and identified a shorter version that could be used in the general practice setting. In a large primary care sample, a three-question version of the AUDIT identified hazardous drinkers as well as the full AUDIT when such drinkers were defined by quantity-frequency criterion. This version of the AUDIT may be useful as an initial screen for assessing hazardous drinking behaviour. However, although the CAGE is a valuable tool for identifying alcohol abuse and dependence, it is not as useful for identifying less serious behaviours, such as hazardous drinking. The first three questions of the audit are as effective as the full audit in identifying hazardous drinkers and the third question identifies the problem drinker and is the same single question as that in the article by Williams and Vinson (see 22-001). The article does not spell



these questions out so I have kindly done this for you (scores for each answer are in brackets). 1. How often do you have a drink containing alcohol? (0) Never, (1) Monthly or less, (2) two to four times a month, (3) two to three times a week, (4) four or more times a week; 2. How many standard drinks do you have on a typical day when you are drinking? (0) one or two, (1) three to four, (2) five or six, (3) seven to nine, (4) ten or more; 3. How often do you have six or more standard drinks on one occasion? (0) Never, (1) Less than monthly, (2) Monthly, (3) Weekly, (4) Daily or almost daily. (See 22-002 for the commentary.)
Comment: A score of three or greater indicate hazardous drinking. A score of two, three or four in Question 3 indicates problem drinking.

Cardiovascular System

22-004 Should calcium channel blockers be used as first-line antihypertensive therapy?

Reust CE. J Fam Pract. March 2001. Vol.50. No.3. p.258.
Reviewed by Dr Bruce Adlam
Review: You have probably seen this in other reviews but a reminder might not do any harm. The authors performed a meta-analysis of randomised controlled trials comparing CCBs with first-line antihypertensives regarding their effects on cardiovascular events. CCBs should not be used as first-line antihypertensive therapy in patients at risk for coronary heart disease and heart failure. Although CCBs lower blood pressure, their effect on preventing acute myocardial infarction, congestive heart failure, and overall cardiovascular mortality is less favorable than with other first-line therapies. (Original article reviewed: Lancet 2000; 356: 1949–54.)
Comment: This meta-analysis supports the recommendation of the Sixth Report on Prevention, Detection, Evaluation and Treatment of High Blood Pressure – use diuretics and ß-blockers as first-line agents.

22-005 Mysteries of mitral valve prolapse: proper treatment requires consideration of all clues.

Mulumudi MS, Vivekananthan K. Postgrad Med. August 2001. Vol.110. No.2. p.43-54.
Reviewed by Dr Chris Milne
Review: Mitral valve prolapse occurs in 2.4% of people, with a slight female predominance. Complications are rare, and tend to occur in those with a mitral systolic murmur, thickened leaflets or LV enlargement. Mitral regurgitation, infective endocarditis and stroke are recognised complications. Antibiotic prophylaxis should be given to those with a click and murmur, or a click with echo evidence of mitral regurgitation.
Comment: Useful update. It confirms my belief that this is usually a benign disorder, and is less prevalent than we once thought.

22-006 Current guidelines for the management of unstable angina: a new diagnostic and management paradigm.

Aroney C, Boyden AN, Jelinek MV, et al. Intern Med J. March 2001. Vol.31. No.2. p.104-11.
Reviewed by Dr Helen Moriarty
Review: The National Heart Foundation of Australia has developed new guidelines, in association with the Cardiac Society of Australia and New Zealand, for management of acute coronary syndrome. These reflect a move toward sensitive diagnostic strategies that stratify the risk of MI for the patient, and toward aggressive, invasive management of high risk patients.
Comment: Well worth reading. Cardiac troponins, ECG, changes as well as signs and symptoms, are used to stratify risk.

22-007 Individualised treatment of heart failure.

Troughton RW, Richards AM, Nicholls MG. Intern Med J. April 2001. Vol.31. No.3. p.138-41.
Reviewed by Dr Helen Moriarty
Review: This paper describes the concept of tailoring treatment to the individual, using as an example a study of 69 patients with symptomatic heart failure, ejection fraction <40%. Brain peptides – BNP and atrial natiuretic peptide ANP are powerful prognostic factors. Treatments which reduce the work load and stretch of the L ventricle cause BNP to fall. The probability of a cardiovascular event in six months is 50% lower when BNP levels are closely managed. ACE inhibitors potenuate BNP, so may require a different target level of BNP to be attained for optimal management.

22-008 Spironolactone in left-sided heart failure: how does it fit in?

Margo KL, Luttermoser G, Shaughnessy AF. Am Fam Physician. 15 October 2001. Vol.64. No.8. p.1393-9.
Reviewed by Dr Len Brake
Review: A potassium sparing diuretic and aldosterone blocking agent this drug was thought to be confined to

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history. Now it has been shown to work synergistically with ACE inhibitors and decreases mortality from left sided congestive heart failure. This is an excellent update and is available as a pdf download from www.aafp.org.

Communicable Diseases, Infections and Parasites

22-009 What clinical features are useful in diagnosing strep throat?

Eaton CA. J Fam Pract. March 2001. Vol.50. No.3. p.201.

Reviewed by Dr Bruce Adlam

Review: Are you sick of reading about this? This is one of the better reviews that acknowledges that always performing a diagnostic laboratory test to uncover group A streptococcus is both impractical and costly. Identifying clinical correlates of strep throat would be useful. The presence of tonsillar exudate or pharyngeal exudates, and a history of streptococcus exposure in the previous two weeks were most useful in predicting current streptococcus pharyngitis (LR+ = 3.4, 2.1, and 1.9, respectively). The absence of tender anterior cervical lymph nodes, tonsillar enlargement, and tonsillar or pharyngeal exudate was most useful in ruling out strep throat (LR- = 0.60, 0.63, and 0.74, respectively). (Original article reviewed: JAMA 2000; 284: 2912-8.)

Comment: There you go.

22-010 Bioterrorism on the home front: a new challenge for American medicine.

Lane HC, Fauci AS. JAMA. 28 November 2001. Vol.286. No.20. p.2595-7.

Reviewed by Dr Len Brake

Review: The first cases of inhalation anthrax in the USA for about 30 years has JAMA devoting much wordage to this disease. This is an editorial and has summarised all relevant detail including history, treatment and has included the link to the CDC's website (See 22-011 and 22-012).

Comment: Very compulsive reading.

22-011 Clinical presentation of inhalational anthrax following bioterrorism exposure: report of two surviving patients.

Mayer TA, Bersoff-Matcha S, Murphy C, et al. JAMA. 28 November 2001. Vol.286. No.20. p.2549-53.

Reviewed by Dr Len Brake

Review: Clinical presentation, diagnostic workup and initial therapy of two postal workers with inhalation anthrax. The clinical course of both cases is itemised and so unfortunately are the autopsy results.

Comment: This is un-put-downable. It is striking how normal 'flu-like' the illness is for five to six days. (See 22-0010 and 22-012).

22-012 Death due to bioterrorism-related inhalational anthrax: report of 2 patients.

Borio L, Frank D, Mani V, et al. JAMA. 28 November 2001. Vol.286. No.20. p.2554-9.

Reviewed by Dr Len Brake

Review: See 22-010 and 22-011.

22-013 Battling biofilms.

Costerton JW, Stewart PS. Sci Am. July 2001. Vol.285. No.1. p.61-7.

Reviewed by Dr Ron Vautier

Review: Bacteria in nature very often live embedded in a gooey extracellular matrix, known as a biofilm. This often makes them difficult to eradicate with conventional antibiotics. Increasing knowledge of the formation and properties of biofilms, including the molecular signaling between individual bacteria, is here described.

Comment: This is useful background knowledge to understand what is going on with urethral catheters, prostate infections, kidney stones, some chronic otitis media, etc.

22-014 Changes in hepatitis C-related liver disease in a large clinic population.

Ostapowicz G, Dallinger M, Bell SJ, et al. Intern Med J. March 2001. Vol.31. No.2. p.90-6.

Reviewed by Dr Helen Moriarty

Review: A study that was hospital-based but came to the conclusion that most patients are diagnosed HCV positive in general practice. Early estimates of cirrhosis and HCC may have been over-estimates based on the specialised nature of HCV clinics where most research is based. This study also is possibly providing over-estimates of disease burden, for the same reason.

Comment: The ultimate disease burden of Hepatitis C is likely to be great in the future. Host factors, such as alcohol intake, may be important in determining progression to cirrhosis.

Dermatology

22-015 What is the best oral antifungal medication for tinea capitis?

Johnston KL, Chambliss ML. J Fam Pract. March 2001. Vol.50. No.3. p.206-7.

Reviewed by Dr Bruce Adlam

Review: Terbinafine is effective, safe for use in children, and relatively inexpensive, and it offers a shorter course of therapy than griseofulvin. Unfortunately, it is not available in liquid form. Fluconazole is available in liquid form and appears to be effective and safe, but fewer clinical trials have been published about it. Griseofulvin taken for six to eight weeks remains an effective therapy for tinea capitis. Ketoconazole and Itraconazole are not as safe and have variable efficacy. There are insufficient randomised controlled trials directly comparing these agents to clearly establish a superior medication. (Grade of Recommendation: B, small randomised controlled trials with limited head-to-head comparisons of drugs.)

Comment: This is an excellent short article.

22-016 The terminology of skin disorders.

Mayer ME. Prim Care. June 2000. Vol.27. No.2. p.277-87.

Reviewed by Dr M Hewitt

Review: Careful, clear and precise detailing of what one sees is, in it-

self, part of the diagnostic process. For skin disorders, terminology being correct is essential. This article makes it clear.

22-017 Pearls in the management of acne: an advanced approach.
Usatine RP, Quan MA. Prim Care. June 2000. Vol.27. No.2. p.289-308.
Reviewed by Dr M Hewitt
Review: The pathophysiology of acne is discussed, followed by descriptive classification and treatment review.
Comment: Excellent review and helpful.

22-018 Rosacea.
Zuber TJ. Prim Care. June 2000. Vol.27. No.2. p.309-18.
Reviewed by Dr M Hewitt
Review: A good account of the condition which is common in the older age group of the adult population. Ocular presentations are discussed along with up-to-date treatment.
Comment: Still can't fix the vascular reactivity associated with the condition.

22-019 Hair disorders.
Jackson EA. Prim Care. June 2000. Vol.27. No.2. p.319-32.
Reviewed by Dr M Hewitt
Review: The article reviews common hair disorders. Anatomy and life cycle of the hair is presented, with much of the article then looking at common population concerns; such as male pattern baldness and psychological disorders presenting with hair problems.
Comment: Don't ask your hairdresser. See your Doctor! Some good website references for downloading clinical photographs.

22-020 Nail disorders.
Mayeaux Jr, EJ. Prim Care. June 2000. Vol.27. No.2. p.333-51.
Reviewed by Dr M Hewitt
Review: Nail disorders accurately reflect certain disease states. Good history taking and sound knowledge will result in accurate diagnosis. Examination techniques and anatomical changes in the nail are discussed and reviewed.
Comment: Helpful illustrations for psoriasis and lichen planus.

22-021 Pediatric exanthems.
Gable EK, Liu G, Morrell DS. Prim Care. June 2000. Vol.27. No.2. p.353-69.
Reviewed by Dr M Hewitt
Review: It is common for a childhood illness, especially febrile, to present with a skin rash. The authors have described 12 common presentations and discuss a sensible way for a primary health care provider to evaluate them. Description, presentation and history are key elements in correct diagnosis.
Comment: Slapped cheek, fifth and sixth disease, Kawasaki syndrome, they're all there.

22-022 Psoriasis.
Drew GS. Prim Care. June 2000. Vol.27. No.2. p.385-406.
Reviewed by Dr M Hewitt
Review: Pathogenesis, diagnosis, management and treatment are discussed. Topicals are reviewed with nothing new mentioned, and the use of cyclosporine and methotrexate covered.
Comment: Anthralin in US-speak is dithranol.

22-023 Fungal skin disorders.
Rupke SJ. Prim Care. June 2000. Vol.27. No.2. p.407-21.
Reviewed by Dr M Hewitt
Review: Yeasts and moulds and how well they grow in our skin is discussed along with pictures to assist with accurate diagnosis and assess response to treatment. Some pharmacological background on polyenes and azoles is given in the context of treatment.

22-024 Cutaneous warts: diagnosis and treatment.
Plasencia JM. Prim Care. June 2000. Vol.27. No.2. p.423-34.
Reviewed by Dr M Hewitt
Review: All about HPV and how it affects the skin, manifesting in warts of various types and found in various locations. Cimetidine is something new to try for difficult children's warts. Tape occlusion for the nature brigade is also an effective remedy in children. For the difficult one, benign neglect works in 66% of cases in two years.

Ear, Nose and Throat

22-025 Management of the patient with Otitis Externa.
Holten KB, Gick J. J Fam Pract. April 2001. Vol.50. No.4. p.353-60.
Reviewed by Dr Bruce Adlam
Review: This is an excellent article on treatment of otitis externa, especially for the lucky beach-based GP. There is a lot of useful information in it including management of necrotising (malignant) otitis externa. For those who just need an update the following may be of interest:- The best evidence (grade of evidence: A) demonstrates equivalent results with ear cleaning, an ear wick, and any of the choices of topical agents - acidifying agents, antibiotics, antibiotic and steroid combinations, or antifungal agents. Physicians should treat patients with one of the following regimens for at least four days: (a) ear cleaning + ear wick + acidifying agent dosed four times daily, (b) ear cleaning + ear wick + topical antibiotic dosed four times daily (twice daily if quinolone), (c) ear cleaning + ear wick + topical antibiotic/steroid combination dosed four times daily (twice daily if quinolone).
Comment: The ear is best cleaned by simply irrigating the canal. Be sure to look for a foreign body, particularly in younger patients. For a wick, use either 5mm gauze, or the Pope ear wick (Merocel Corporation, Mystic, Conn). The wick helps draw topical medications into the affected canal, particularly when it is obstructed. The patient should return in approximately two days for removal of the wick and reassessment. Don't forget analgesics.

Endocrinology

22-026 Ramipril and the development of diabetes.

Yusuf S, Gerstein H, Hoogwerf B, et al. JAMA. 17 October 2001. Vol.286. No.15. p.1882-5.
Reviewed by Dr Len Brake
Review: Ramipril is an ACE inhibitor and this study compares it to placebo in preventing diabetes II. Consistently the use of ramipril almost halved the incidence of diabetes diagnoses. Exciting possibilities but 'needs further work' is the conclusion. Interesting to read the connection between ACE inhibitors, diabetes II and the prevention thereof.

22-027 Cutaneous manifestations of diabetes mellitus.

Paron NG, Lambert PW. Prim Care. June 2000. Vol.27. No.2. p.371-83.
Reviewed by Dr M Hewitt
Review: There is a rising prevalence of diabetes mellitus in the developed world due to obesity and lifestyle changes in activity and diet. The article looks at skin conditions which have a strong association with diabetes to assist in early diagnosis. With established diagnosis, the authors mention manifestations related to infectious origins, complications of the disease or the treatment.

Eye Diseases

22-028 Hormone replacement therapy and dry eye syndrome.

Schaumberg DA, Buring JE, Sullivan DA, et al. JAMA. 7 November 2001. Vol.286. No.17. p.2114-9.
Reviewed by Dr Len Brake
Review: An impression is that the use of HRT has peaked out in this country but it is still a popular treatment for menopausal symptoms. Earlier research had indicated that oestrogen may have detrimental effects on the tear film - 'dry eye syndrome' - this is assessed in this large cohort study. Indeed the correlation between HRT and the dry eye syndrome is confirmed.
Comment: Those prescribing HRT should warn women of the problem. It's no good saying 'read this and weep' because most of them can't. Weep that is.

22-029 The challenge of macular degeneration.

Sun H, Nathans J. Sci Am. October 2001. Vol.285. No.4. p.60-7.
Reviewed by Dr Ron Vautier
Review: The condition arises from malfunctioning of cells of the retinal pigment epithelium which normally deal with degenerating outer segments of the rods and cones. Genetic studies of closely related disorders are starting to elucidate the mechanisms involved in age related maculopathy. Current and potential future treatments are described.
Comment: Quite fascinating.

Family Practice

22-030 Continuity of care and trust in one's physician: A comparison of the United States and the United Kingdom.

Mainous AG III, Baker R, Love MM, et al. J Fam Pract. March 2001. Vol.50. No.3. p.246.
Reviewed by Dr Bruce Adlam
Review: This is not the type of article that GPs in New Zealand would request as they feel it in their water anyway. So I will include the results here as it is endorsing of the principles of general practice we hold dear. The objective was to explore the relationship between continuity of care and trust in one's physician, particularly in terms of the differences between the United States and the United Kingdom. Although UK patients (98.1%) were more likely than US patients (88.2%) to report having a usual site of care (P=.0001), there was no difference between the UK patients (81.6%) and the US patients (79.0%) in likelihood of having a regular physician (P=.36). A total of 53.0% of the UK patients and 8.0% of the US patients have had their regular physicians for more than six years (P=.0001). US patients (83.9%) are more likely than UK patients (60.4%) to value continuity with a physician (P=.0001). The US patients (mean=44.9) have a slightly higher level of trust in their physicians than the UK patients (mean=43.8; P=.02), although both groups have high levels of trust. In a multivariate model, country of residence had no independent relationship with trust, but continuity of care was significantly related. (See 22-031 for the commentary.)
Comment: If you have skipped the gobbledy-gook it means that higher continuity of care is associated with a higher level of trust between a patient and a physician. The final comment was that 'Efforts to improve the relationship between patients and physicians may improve the quality and outcomes of care'. Our issue in New Zealand would be the political environment to 'preserve' the relationship while not denying that improvement is always desirable.

22-031 The North American Primary Care Research Group: Supporting research by and for family physicians.

Westfall JM, Ebell M, MaCaulay AC. J Fam Pract. March 2001. Vol.50. No.3. p.245.
Reviewed by Dr Bruce Adlam
Review: See 22-030.

Gastroenterology

22-032 Why barium enemas fail to identify colorectal cancers.

McDonald S, Lyall P, Israel L, et al. Aust N Z J Surg. November 2001. Vol.71. No.11. p.631-3.
Reviewed by Dr Len Brake
Review: A retrospective review of 313 patients with proven bowel cancer who had had a barium enema within two years of diagnosis; 6.7% of the cancers were missed. The whys and wherefores are looked at with advantages of the BE over colonscopy and vice versa (See 22-033).
Comment: A New Zealand paper; highly relevant.

22-033 Barium enema: to be or not to be: is that the question?
Mendelson RM. Aust N Z J Surg. November 2001. Vol.71. No.11. p.627-8.
Reviewed by Dr Len Brake
Review: See 22-032.

22-034 NSAID-related gastrointestinal injury: evidence-based approach to a preventable complication.
Fennerty MB. Postgrad Med. September 2001. Vol.110. No.3. p.87-94.
Reviewed by Dr Chris Milne
Review: The optimal method of preventing NSAID related gastrointestinal injury is to avoid the use of these agents. Even doses of aspirin as low as 75mg daily can double the risk of ulcer bleeding. Co-prescription of proton pump inhibitors with NSAIDs is one useful strategy, the other is to use a selective COX-2 inhibitor.
Comment: Useful summary article with the evidence base for what we should do in routine clinical practice.

Genetics

22-035 Complete genomic screen in Parkinson disease: evidence for multiple genes.
Scott WK, Nance MA, Watts RL, et al. JAMA. 14 November 2001. Vol.286. No.18. p.2239-44.
Reviewed by Dr Len Brake
Review: The number of patients affected with Parkinson Disease (PD) is increasing as the population ages. The relative contribution of genes vs environment in causes of PD has been controversial. Twin studies have suggested little genetic contribution. The data presented in this paper suggests that the parkin gene is important in early onset PD and that multiple genetic factors are important in later-onset PD (see 22-036 and 22-037).

22-036 Association of single-nucleotide polymorphisms of the Tau Gene with late-onset Parkinson disease.
Martin ER, Scott WK, Nance MA, et al. JAMA. 14 November 2001. Vol.286. No.18. p.2245-50.
Reviewed by Dr Len Brake
Review: See 22-035 and 22-037.

22-037 Tau and Parkinson disease.
Spillantini MG, Goedert M. JAMA. 14 November 2001. Vol.286. No.18. p.2324-6.
Reviewed by Dr Len Brake
Review: See 22-035 and 22-036.

22-038 Population screening for HFE-associated haemochromatosis: should we have to pay for our genes?
Yapp TR, Eijkelkamp EJ, Powell LW. Intern Med J. January/February 2001. Vol.31. No.1. p.48-52.
Reviewed by Dr Helen Moriarty
Review: Interest in haemochromatosis has taken a revival since the discovery of the HFE gene and its mutations, on chromosome 6. Mis-sense mutations are quite common, can be used to diagnose cases and to screen for patients with a predisposition to iron overload. However, 30% of homozygotes will not express iron overload in their lifetime. Despite this, haemochromatosis meets the WHO criteria for screening.
Comment: This paper debates phenotype (transferrin) vs genotype (DNA test) screening for the disease. Tests of phenotype over age 15 years show which of those with the genotype are going to develop expression of haemochromatosis.

Geriatrics

22-039 Urinary symptoms and incontinence in an urban community: prevalence and associated factors in older men and women.
Muscatello DJ, Rissel C, Szonyi G. Intern Med J. April 2001. Vol.31. No.2. p.151-60.
Reviewed by Dr Helen Moriarty
Review: A household survey in New South Wales of people aged over 41 years revealed that urinary symptoms are very common, and more than half of patients do not seek treatment. Associated factors include obesity, low SE status, fair or poor self-rated health status, age >70 years.
Comment: A broader focus should be taken on urinary symptoms. Those who seek treatment may be a specific subset of the patients who have this problem in the community. Symptoms should be clearly delineated in order to recognise the various syndromes that cause this symptom.

22-040 Early diagnosis of dementia.
Santacruz KS, Swagerty D. Am Fam Physician. 15 February 2001. Vol.63. No.4. p.703-13.
Reviewed by Dr J R Elliott
Review: An article setting out the early signs and symptoms of dementia. A comparison with age-related cognitive decline and investigation to exclude other diagnoses including delirium and other potentially treatable aetiologies. A summary of the different types of dementia, including Alzheimer's, multi-infarct, and dementia with Lewy Bodies. Patient information page attached. See editoral 22-041.
Comment: A simply excellent, top drawer, reference article when faced with any patient in whom the diagnosis of dementia is to be considered. Clear, concise and mandatory reading. Clinically extremely relevant.

22-041 Mild cognitive impairment in the elderly.
Brandt J. Am Fam Physician. 15 February 2001. Vol.63. No.4. p.620-6.
Reviewed by Dr J R Elliott
Review: See 22-040.

Gynecology

22-042 Chronic vulvovaginal candidiasis.
Nyirjesy P. Am Fam Physician. 15 February 2001. Vol.63. No.4. p.697-702.
Reviewed by Dr Sarah Turner
Review: This article summarises current concepts in the evaluation of women with chronic vulvovaginal symptoms. It looks in more detail at recurrent vulvovaginal candidiasis

and its possible causes and treatment strategies.
Comment: This is a topic which we tend to ignore as it can be a source of frustration for both the patient and doctor. This article is very helpful.

22-043 Endometrial biopsy.

Zuber TJ. Am Fam Physician. 15 March 2001. Vol.63. No.6. p.1131-5.
Reviewed by Dr William Ferguson
Review: A detailed description of method, materials, indications, contraindications, complications and interpretation of this relatively simple office procedure. Patient information page attached. Also Official Procedures form attached.
Comment: With a small amount of training this should become part of a new wave of skills in General Practice that GPs with a solid background in gynaecology can usefully add to their repertoire.

Health Services

22-044 Evaluating health-care delivery: Hospital in the home.

Ruth D, Greenberg PB, Campbell DA. Intern Med J. April 2001. Vol.31. No.3. p.135-7.
Reviewed by Dr Helen Moriarty
Review: An overview of the hospital-in-the-home programme in Australia. There are many different programmes under as many different funding arrangements. Some programmes have been found to cost more than in-hospital care, some to cost less.
Comment: The editorial cautions against hasty analysis and decisions based upon poor data. HITH has to be tailored to the expectations and wishes of the patients. This calls for a different skill set in the primary care workforce.

Homeopathy

22-045 Homeopathic pathogenetic trials of Acidum malicum and Acidum ascorbicum.

Fisher P, Dantas F. Br Homeopath J. July 2001. Vol.90. No.3. p.118-25.
Reviewed by Dr Mimi Irwin
Review: This is a study that investigated the traditional homeopathic activity of provings. Two substances Acidum malicum and Acidum ascorbicum diluted to 12cH were taken by healthy volunteers. Both studies were double blind, placebo controlled and randomised. There was no difference between verrum and placebo groups when the study was analysed.
Comment: The study groups were small - a problem that dogs homeopathic research. This study opens a window on to how healthy individuals can produce a myriad of symptoms especially if asked to record them!

22-046 Effects of homeopathic treatment in women with premenstrual syndrome: a pilot study.

Yakir M, Kreitler S, Brzezinski A, et al. Br Homeopath J. July 2001. Vol.90. No.3. p.148-53.
Reviewed by Dr Mimi Irwin
Review: The homeopathic treatment of premenstrual syndrome was evaluated in this study. It is a randomised, controlled double blind clinical trial with two months baseline assessment and post treatment follow-up for three months. Five different medications were used and matched to the patients symptomatology. Patients receiving active medication had less time off work, reduced their intake of orthodox medication and reported less somatic and psychological symptoms. The treatment was one dose only.
Comment: This is an excellent study hampered by small numbers. This article should be most useful to anyone starting out in homeopathy.

22-047 Patient benefit survey: Liverpool Regional Department of Homoeopathic Medicine.

Richardson WR. Br Homeopath J. July 2001. Vol.90. No.3. p.158-62.
Reviewed by Dr Mimi Irwin
Review: This outcome survey was carried out over 12 months at the Liverpool Regional Department of Homeopathic Medicine. There were 1 100 patients surveyed with the Glasgow Homeopathic Hospital Outcome Score. This is a self assessment tool. 76.6% of patients reported an improvement and 52% reduced their conventional medication.
Comment: A number of outcome studies have been done in recent years. They show high patient satisfaction, a similar degree of improvement and reduction in use of pharmaceutical agents. Homeopathy appears helpful for PMS, recurrent URTIs, eczema, headache and menopausal symptoms. Its not particularly useful in psoriasis.

Immunology and Allergy

22-048 Do patients with local reactions to allergy shots require dosage reductions for subsequent injections?

Kinkade S. J Fam Pract. March 2001. Vol.50. No.3. p.202.
Reviewed by Dr Bruce Adlam
Review: Many physicians reduce the dose of allergen immunotherapy when patients have significant local reactions to their allergy shots, believing that these patients are at higher risk for systemic reactions. This dose reduction is made despite the fact that the World Health Organization stated in a position paper on allergen immunotherapy that local reactions are not predictive of subsequent systemic reactions. This big study of nearly 13 000 allergy shots supports recommendations that an allergy shot dosage reduction is not needed after a local reaction to the previous dose, unless the reaction is larger than 8 cm. There were no significant differences in the rate of systemic reactions between those who had their dose reduced because of a local reaction and those who did not. (Original article reviewed: J Allergy Clin Immunol 2000; 106: 840-3.)

Musculoskeletal System

22-049 Outcome of surgery for chronic achilles tendinopathy: A critical review.

Tallon C, Coleman BD, Khan KM, et al. Am J Sports Med. May/June 2001. Vol.29. No.3. p.315-20.
Reviewed by Dr C Hanna

Review: This paper critically assessed 26 studies reporting surgical outcomes in patients with chronic achilles tendinopathy
Comment: They concluded that those papers that were better designed generally reported a poorer outcome, and they provide guidelines for planning future studies.

22-050 Early rheumatoid arthritis: can we predict its outcome.

Williamson AA, McColl GJ. Intern Med J. April 2001. Vol.31. No.2. p.168-80.
Reviewed by Dr Helen Moriarty
Review: This review paper looks firstly at the difficulties in evaluating issues of rheumatoid arthritis due to imprecise diagnosis in the early stages, changing treatment models, differing outcome measures, new tests, and interpretation of genetic markers. It then suggests an approach to initial management of RA.
Comment: The issues are not only confounded by the rapid development of tests and treatment agents, but also the lack of understanding of prognostic factors in RA.

Neurology

22-051 Are angiotensin-converting enzyme (ACE) inhibitors effective in preventing migraine in nonhypertensive patients?

Montgomery L. J Fam Pract. April 2001. Vol.50. No.4. p.299.
Reviewed by Dr Bruce Adlam
Review: This well-designed study of lisinopril for moderate migraine sufferers suggests that another class of medications may be beneficial for prophylaxis. Though a relatively modest decrease in headaches was reported, and there was wide variability in the results, lisinopril was well tolerated and has advantages over current prophylactic medications. A certain subset of patients responded very well to treatment. For patients with frequent migraines who have not responded to other prophylactic medications, a trial of ACE inhibitors may be useful. The dose of lisinopril was 10 mg for one week, then 20 mg for the remaining 11 weeks. (Original article reviewed in: BMJ 2001; 322: 19-22).
Comment: Note this is a small study and results may not be generalisable.

Obstetrics

22-052 What medications are safe and effective for heartburn during pregnancy?

Koenig CJ. J Fam Pract. April 2001. Vol.50. No.4. p.304-5.
Reviewed by Dr Bruce Adlam
Review: Ranitidine (150mg bd) is the best-studied agent effective for treatment of heartburn in pregnancy and even this study was limited by its short duration (<1 month) and small sample size (N=30). Some antacids are effective, but it may be prudent to avoid them in the first trimester until better safety studies are published. Although sucralfate, metoclopromide, and the proton pump inhibitors are probably safe in pregnancy, there is no data about their efficacy. (Grade of Recommendation: B.) In the antacid group, aluminum phosphate (cannot find a product listed in NZ) was the most effective. Patients who received a combination of magnesium and aluminum hydroxide for seven days had no more relief of symptoms than the placebo group. Atlay and colleagues found that sodium bicarbonate significantly reduced reflux symptoms compared with placebo (P=.021; NNT=6.0). Sorry no information specifically regarding alginates (i.e. Gaviscon, Mylanta) in heartburn relief.
Comment: Some issues are raised here about the safety of antacids during pregnancy. This could well be due to recall bias or other systematic biases inherent in case-control methodology.

22-053 Membrane sweeping in conjunction with labor induction.

Foong LC, Vanaja K, Tan G, et al. Obstet Gynecol. October 2000. Vol.96. No.4. p.539-42.
Reviewed by Dr William Ferguson
Review: This randomised trial looked for benefits in stripping or sweeping the membranes off the lower segment in conjunction with routine vaginal prostaglandins, to induce labour. There were clear benefits to labour and delivery in nulliparas with unfavourable cervices.
Comment: Shorter induction to labour intervals, lower doses of oxytocin and higher delivery rates all suggest this is a useful trick for facilitating inductions, especially when they are likely to be difficult.

22-054 A second-stage partogram.

Sizer AR, Evans J, Bailey SM, et al. Obstet Gynecol. November 2000. Vol.96. No.5. p.678-83.
Reviewed by Dr William Ferguson
Review: The value of a partogram in first stage was established 20 years ago, but what about a simplified partogram of the second stage of labour, based upon a scoring system of position and station? The sum of descent and position scores were plotted against time elapsed for 1 400 labouring women. The relative importance of position, station and total score were assessed for ability to predict mode of delivery by using logistic regression.
Comment: A fascinating dissection of the anatomy of the second stage, with some interesting but predictable associations. Worth reading to remind us of the need for close observation of progress in second stage.

Orthopedics

22-055 Anterior cruciate ligament function after tibial eminence fracture in skeletally mature patients.

Ahmad CS, Shubin Stein BE, Jeshuran W, et al. Am J Sports Med. May/June 2001. Vol.29. No.3. p.339-45.
Reviewed by Dr C Hanna
Review: Three groups of patients were assessed for functional knee score, joint laxity, and proprioception - ACL deficient patients, those who had had a bone-patellar tendon-bone graft reconstruction, and those who had had a tibial eminence avulsion fracture after reaching skeletal maturity.

Comment: This study shows that regardless of treatment there is a strong correlation between ACL laxity and loss of proprioception, and that there was no statistical difference between the ACL reconstruction group and the tibial eminence fracture group.

Paediatrics

22-056 Is teething in infants associated with fever or other symptoms?

Frank J, Drezner J. J Fam Pract. March 2001. Vol.50. No.3. p.257.
Reviewed by Dr Bruce Adlam

Review: Parents and clinicians have traditionally attributed to teething many symptoms, such as fever, pain, irritability, diarrhea, drooling, and sleep disturbance. However, little evidence exists to support this claim. The authors investigated the relationship between tooth eruption, fever, and teething symptoms. (Original article reviewed in: Pediatrics 2000; 106: 1374-9).

Comment: This study provided no conclusive evidence that a relationship exists between the eruption of teeth and the experience of symptoms. Temperature greater than 38°C or other serious symptoms in an infant should not be regarded by clinicians as due to teething and should be evaluated appropriately.

22-057 Is oral dexamethasone as effective as intramuscular dexamethasone for outpatient management of moderate croup?

Newton W. J Fam Pract. March 2001. Vol.50. No.3. p.260.
Reviewed by Dr Bruce Adlam

Review: Recent meta-analyses have concluded that steroids ameliorate croup, but questions remain about the effectiveness of oral dosing. This study provides evidence that a single dose of dexamethasone (0.6 mg/kg, maximum dose 8 mg) given orally is as effective as injectable administration for the outpatient treatment of moderate croup. Oral dexamethasone given in a syrup or jelly is well tolerated. Clinicians should feel comfortable using either oral or IM dexamethasone to treat patients with moderate croup. (Original article reviewed: Pediatrics 2000; 106: 1344-8.)

22-058 Children's UTIs in the new millennium.

White CT, Matsell DG. Can Fam Physician Med Fam Can. August 2001. Vol.47. p.1603-8.
Reviewed by Dr Mike Lyons

Review: Supports stated rationale for diagnosis, testing and treating UTI in children with evidence-based information (accepting limitations). Tables ten rules for take home messages that neatly summarise the article.

Comment: Practical reinforcement.

Pharmacology

22-059 Beyond chicken soup.

Haseltine WA. Sci Am. November 2001. Vol.285. No.5. p.44-51.
Reviewed by Dr Ron Vautier

Review: The number of anti-viral vaccines and drugs is increasing rapidly as scientists elucidate the details of virus life cycles and sequence their genomes. Thus new drugs are developed from a rational targeted approach rather than the previous one of try it and see.

Comment: This article offers an excellent review of current knowledge of viral structure and function, and is readily comprehensible.

Physician-Patient Relations

22-060 The factors associated with disclosure of intimate partner abuse to clinicians.

Rodriguez MA, Sheldon WR, Bauer HM, et al. J Fam Pract. April 2001. Vol.50. No.4. p.338-44.
Reviewed by Dr Bruce Adlam

Review: The goal of this study was to identify the prevalence, determinants of, and barriers to clinician-patient communication about intimate partner abuse. The study was conducted by telephone interviews with a random sample of 375 ethnically diverse abused women. Forty-two per cent (159) of the patients reported having communicated with a clinician about abuse. Significant independent predictors of communication were direct clinician questioning about abuse. Factors associated with lack of communication about abuse included immigrant status, and patient concerns about confidentiality. Barriers significantly associated with lack of communication were patients' perceptions that clinicians did not ask directly about abuse, beliefs that clinicians lack time and interest in discussing abuse, fears about involving police and courts, and concerns about confidentiality. Less than 15% of women patients in primary care settings report being asked about abuse by health care professionals. Yet the majority of women patients report that they favour direct questioning by clinicians about IPA and would reveal abuse histories if asked directly.

Comment: The hanging question is why health professionals don't ask the direct question? Is this a fear of the time that might be involved if it yields a positive answer, a sense that they lack the skills to deal with the answer, or that questioning about abuse is some mysterious skill that requires more than the empathy held by the majority of health professionals.

22-061 Why complaining is good for medicine.

Walton M. Intern Med J. March 2001. Vol.31. No.2. p.75-6.
Reviewed by Dr Helen Moriarty

Review: A short discussion paper that exhorts us all to look at the positive aspects of patient complaint - the encouragement of self assessment, maintenance of trust and of standards, leading to improvement in practices and protection of the public as well as reminding us of our ethical and professional obligations.

Preventive Medicine and Screening

22-062 Process evaluation of a tailored multifaceted approach to improving preventive care.

Baskerville NB, Hogg W, Lemelin J. J Fam Pract. March 2001. Vol.50. No.3. p.241.
Reviewed by Dr Bruce Adlam

Review: This original research, although small, looked at outreach facilitation to improve preventive performance in practices. This was set in Ontario. The main components for creating change are audit and feedback of preventive performance, achieving consensus on a plan for improvement, and implementing a reminder system. Ninety-five per cent of the physicians were either satisfied or very satisfied with the intervention, and 90% would have been willing to have the prevention facilitator continue working with their practice.

Comment: This RCT was confined to the implementation of the programmes and had no outcomes data of the efficacy of the programme, which is probably a big ask after only 17 months. There was no patient satisfaction data.

22-063 Screening for cancer: evaluating the evidence.

Gates TJ. Am Fam Physician. 1 February 2001. Vol.63. No.3. p.513-22.
Reviewed by Dr William Ferguson

Review: This paper arms the reader with the analytical skills necessary to consider the effectiveness and appropriateness of a screening programme. Some current areas of controversy are then discussed as examples.

Comment: Essential background knowledge for anyone implementing any screening programme, and a useful partner to the March 2001 paper on screening guidelines (see 22-064) and the editoral in this issue 22077.

22-064 The science and politics of cancer screening.

Dickey LL. Am Fam Physician. 1 February 2001. Vol.63. No.3. p.440, 442.
Reviewed by Dr William Ferguson

Review: See 22-063.

22-065 Cancer screening guidelines.

Zoorob R, Anderson R, Cefalu C, et al. Am Fam Physician. 15 March 2001. Vol.63. No.6. p.1101-12.
Reviewed by Dr William Ferguson

Review: This paper summarises the recommendations of a range of august American medical organisations on cancer screening. Included are recommendations on breast, cervical, colorectal, prostate, skin, testicular, endometrial, lung, oral and ovarian cancers. (See 22076).

Comment: A useful overview that could be used as a handy reference. The range of opinions is wide and it is useful to put NZ strategies in an international context of medical opinion.

Primary Health Care

22-066 Utilization of physicians' services under universal health insurance in Ontario.

Finkelstein M. J Fam Pract. March 2001. Vol.50. No.3. p.248.
Reviewed by Dr Bruce Adlam

Review: The objective of this study was to use population-based individual-level health and income information linked to health insurance utilisation data to determine whether the objective of access to care on the basis of need rather than income has been achieved in Ontario, Canada. The National Population Health Survey collected information about the health status and income of Canadians. Respondents to the 1995 survey were asked for approval to link their information to health insurance plan administrative databases. The respondents (N=2170) were aged 40 to 79 years and were residing in the province of Ontario. The outcome measures were per capita costs of care in relation to income and self-reported health status, and the odds of referral to a specialist in relation to income and health. Results showed lower-income households incurred higher per capita expenditures on physicians' services than higher-income households. Expenditures were significantly related to health status. After adjustment for health status, there was no association between income and the costs of total physician services, out of hospital services, or specialist care. The goal of those who developed Canada's universal health insurance system has been realised. Use of physicians' services is on the basis of need rather than income.

Comment: I've only included this as it raises questions regarding the different outcomes for the free under 6's scheme for children, and the issues regarding the hard to get to groups in New Zealand. (Published in the JFP as an abstract only.)

Procedures and Techniques

22-067 Fingertip injuries.

Wang QC, Johnson BA. Am Fam Physician. 15 May 2001. Vol.63. No.10. p.1961-66.
Reviewed by Dr William Ferguson

Review: A detailed review of the diagnosis and treatment of fingertip injuries, with useful recommendations on what needs referral.

Comment: A common presentation in general practice, yet one that can cause preventable permanent disability if mistakes are made.

Psychiatry and Psychology

22-068 Is imipramine or buspirone treatment effective in patients wishing to discontinue long-term benzodiazepine use?

Sontheimer DL, Ables AZ. J Fam Pract. March 2001. Vol.50. No.3. p.203.
Reviewed by Dr Bruce Adlam

Review: Discontinuation of benzodiazepines in patients on long-term treatment may be associated with restlessness, agitation, increased anxiety, insomnia, irritability, palpitations, and many other troublesome symptoms. This small study indicates that imipramine (25mg daily) is a viable adjunctive agent in promoting benzodiazepine discontinuation in

motivated patients who are dissatisfied with their treatment (82.5% free at three months cf 37.5% placebo NNT 2). However, the severity of withdrawal symptoms was worse in the imipramine-treated patients than with the buspirone- and placebo-treated patients. Buspirone (5mg daily) did not affect withdrawal rates, although the study probably did not have sufficient power to detect a benefit if one truly exists. (Original article reviewed: Am J Psychiatry 2000; 157: 1973-9.)

22-069 The truth and the hype of hypnosis.

Nash MR. Sci Am. July 2001. Vol.285. No.1. p.37-43.
Reviewed by Dr Ron Vautier

Review: Behavioural and physiological responses, including PET brain scanning, to hypnotic suggestion have been more rigorously determined in recent decades. Hypnosis can often help in treating pain, obesity, insomnia, anxiety and hypertension, and possibly in some asthma, skin conditions (including warts), and irritable bowel syndrome.
Comment: It would seem medical practitioners are significantly underutilising a useful and very safe therapeutic modality.

22-070 Preventing lithium intoxication: guide for physicians.

Delva NJ, Hawken ER. Can Fam Physician Med Fam Can. August 2001. Vol.47. p.1595-600.
Reviewed by Dr Mike Lyons

Review: This article raises the awareness of lithium toxicity. A case study highlights risk factors. Comorbidity, other medications and general patient assessment are stressed. The fallacy of relying solely on lithium levels is emphasised. Symptoms of toxicity and guidelines for monitoring are tabled.
Comment: A good reference article to consult when dealing with patients on lithium.

22-071 Depression in children and adolescents.

Son SE, Kirchner JT. Am Fam Physician. 15 November 2000. Vol.62. No.10. p.2297-308.
Reviewed by Dr Sarah Turner

Review: Reviews depression in children and adolescents in depth. Some valuable tools for diagnosing depression are given. Treatment with psychotherapy, tricyclic antidepressants and SSRIs is reviewed. Patient information page attached.
Comment: Very interesting. It is one of those things that can be very difficult to diagnose. I'm sure you will find a use for the diagnostic tools.

Research Design and Methodology

22-072 Hypothesis: The research page: Part 3: Power, sample size, and clinical significance.

Godwin M. Can Fam Physician Med Fam Can. July 2001. Vol.47. p.1441-3.
Reviewed by Dr Mike Lyons

Review: Part three in this series of succinct articles dealing with evidence. Explains alpha and beta errors, clinical and statistical significance, power and sample size by example and bell curve graphs.
Comment: Read this article if you want to answer the question: 'If I want to be 95% certain that any difference I see is not due to chance and 80% certain that if I conclude there is no difference I am correct, how many people do I need in this study?'

22-073 Evidence-based medicine: Science and art.

Godwin M, Dawes M. Can Fam Physician Med Fam Can. August 2001. Vol.47. p.1527-30.
Reviewed by Dr Mike Lyons

Review: This editorial integrates the current art and science of evidence-based medicine and explains the urgent need for a Global Medical Knowledge Database (GMKD) as recently proposed in the BMJ.
Comment: Eminently sensible - may even convince some sceptics. Fifteen essential references to current EBM sources.

Sports and Sports Medicine

22-074 Athletic activity after joint replacement.

Healy WL, Iorio R, Lemos MJ. Am J Sports Med. May/June 2001. Vol.29. No.3. p.377-88.
Reviewed by Dr C Hanna

Review: The first decade of the 21st century has been declared the 'Bone and Joint Decade' by 35 countries and 44 states in the United States. With an ageing population, the prevalence of arthritic joints is increasing. Remaining active has many health benefits.
Comment: This 'current concepts' article presents a consensus recommendation for appropriate exercise activity in patients who have had a joint replacement.

22-075 The use of local anaesthetic injections in professional football.

Orchard J. Br J Sports Med. 1 August 2001. Vol.35. No.4. p.212-3.
Reviewed by Dr Chris Milne

Review: Local anaesthetic injections are widely used in several professional football codes throughout the world. However, their use is banned by the International Rugby Board. John Orchard argues that in the professional game, an injection that increases the number of games where a player can take the field is justified. He makes a plea for published guidelines for rational use of local anaesthetic injections.
Comment: Very thought-provoking article. I would agree with most of his assertions, but feel that any published guidelines would have to be relatively general or they would be reinterpreted as rules by non-medical professionals (e.g. lawyers!).

22-076 Computerised cognitive assessment of athletes with sports related head injury.

Collie A, Darby D, Maruff P. Br J Sports Med. 1 October 2001. Vol.35. No.5. p.297-302.
Reviewed by Dr Chris Milne

Review: Traditional neuropsychological assessment of concussed players has been via paper based systems. Computerised cognitive tests have the capacity to detect very mild cognitive dysfunction, and demonstrate less 'practice effects' making them

more suitable for repeated use. They have yet to be fully validated, but probably represent the future of post concussion testing.
Comment: A useful idea. Implementation is probably a few seasons away, but these tests look promising.

22-077 Provocation by eucapnic voluntary hyperpnoea to identify exercise induced bronchoconstriction.

Anderson SD, Argyros GJ, Magnussen H, et al. Br J Sports Med. 1 October 2001. Vol.35. No.5. p.344-7.
Reviewed by Dr Chris Milne
Review: Sports administration, particularly the IOC Medical Commission, have been looking for a laboratory test that provides objective evidence of exercise induced asthma. This test looks like it fits the bill. It requires the subject to hyperventilate at 85% maximal voluntary ventilation, breathing dry air containing 5% carbon dioxide for 6 minutes. A fall of FEV1 of 10% or more from baseline is regarded as a positive test for exercise induced asthma/bronchospasm.
Comment: This is the future for international level asthmatic athletes. No longer will a doctor's letter be sufficient. These tests will need to be done before dispensation will be given to use ß2 agonists at an Olympic Games.

Surgery

22-078 Women's health after plastic surgery.

Englert H, Joyner E, McGill N, et al. Intern Med J. March 2001. Vol.31. No.2. p.77-89.
Reviewed by Dr Helen Moriarty
Review: A retrospective review of a cohort of Sydney women who had breast augmentation between 1979-1983. No association was found between this procedure and connective tissue disease, although axillary adenopathy and low titre ANA tests were detected more frequently in those who had silicone vs non-silicone plastic surgery.
Comment: The paper concludes that low titre ANA tests are of dubious significance for women who have had breast implants, there being no other differences detected for silicone-exposed women.

Therapeutics

22-079 Is rofecoxib safer than naproxen?

Adelman A. J Fam Pract. March 2001. Vol.50. No.3. p.204.
Reviewed by Dr Bruce Adlam
Review: The risk of gastrointestinal events is lower with rofecoxib (Vioxx) than with naproxen in patients treated continuously for one year with standard doses. The absolute difference between these two agents is small and should be weighed against the increased cost of rofecoxib. A recent study comparing celecoxib (Celebrex) with ibuprofen and diclofenac showed similar results. (Original article reviewed: N Engl J Med 2000; 343: 1520-28.)

22-080 How soon should serum potassium levels be monitored for patients started on diuretics?

Blanning A, Westfall JM. J Fam Pract. March 2001. Vol.50. No.3. p.207-8.
Reviewed by Dr Bruce Adlam
Review: Case series show that hypokalemia following initiation of diuretic therapy occurs in (7-56%) of patients usually within two to eight weeks. Patients taking diuretics should have a potassium level check in the first two to eight weeks after initiating therapy. Mild hypokalemia (3.1 to 3.4 mmol/L) may be transient, so a repeat measurement may be considered before initiating potassium replacement. This is another good review which suggests polypharmacy, glucocorticoids, and being female as risk factors. Dietary sodium restriction may also help to conserve potassium, because this will decrease urinary flow rate and potassium loss. The frequency with which to check potassium levels should be guided by the patient's underlying clinical conditions and dietary potassium and sodium intake. (Grade of Recommendation: C, based on case series.)

22-081 A randomized controlled trial of patient self-management of oral anticoagulation therapy compared with primary care management.

Fitzmaurice DA, Murray ET, Gee KM, et al. J Fam Pract. March 2001. Vol.50. No.3. p.248.
Reviewed by Dr Bruce Adlam
Review: This study has demonstrated that patient self-management is feasible within the United Kingdom primary care setting. It remains to be seen whether this model of care is generalisable to different environments and whether it will be cost-efficient compared with hospital practice.
Comment: This is a very small RCT, however, I know some practices are using Coaguchek (Roche Diagnostics) devices and it certainly has positive implications for rural practices that have limited access to laboratories or even telephone communication with their GP. (Published in the JFP as an abstract only.)

22-082 Does lipid lowering increase nonillness mortality?

Sweeney T, Odell C, Botler J, et al. J Fam Pract. April 2001. Vol.50. No.4. p.297.
Reviewed by Dr Bruce Adlam
Review: Though cholesterol-lowering therapy can reduce cardiovascular morbidity and mortality, earlier studies raised concerns that reducing cholesterol concentrations might increase the risk of cancer and deaths from suicides, accidents, and violence (i.e. nonillness mortality). This meta-analysis did not show a statistically significant relationship between cholesterol lowering and increased risk of non-illness mortality. (Original article reviewed: BMJ 2001; 322: 11-15.)

22-083 Cyclooxygenase inhibitors: any reservations?

Penglis PS, James MJ, Cleland LG. Intern Med J. Janurary/February 2001. Vol.31. No.1. p.37-41.
Reviewed by Dr Helen Moriarty
Review: A concise four page article on the cox-1 and cox-2 medications.

It explains the role of these inhibitors, and the thought processes behind the search for selective inhibition. It is now apparent that cox-2 selective inhibitors may have untoward side effects, because cox-2 may have a useful 'housekeeping' role in the absence of inflammation.

Comment: A good article for those who are confused about the roles of these two isoenzymes. Clinical bottom line? – that they have overlapping physiological as well as inflammatory effects.

Urology

22-084 The urgent call of albuminuria/proteinuria: heeding its significance in early detection of kidney disease.

Hebert LA, Spetie DN, Keane WF. Postgrad Med. October 2001. Vol.110. No.4. p.79-96.

Reviewed by Dr Chris Milne

Review: Proteinuria typically serves as the first evidence of progressive kidney disease. Benign orthostatic proteinuria (present when standing but not when recumbent) is a disorder of children and young adults. Mild proteinuria may be exercise related. In all cases, the doctor should first exclude kidney disease. It is important to consult early with a nephrologist. By the time the serum creatinine has climbed above the normal range, 80% of normal kidney function has been lost. Renoprotective strategies are best implemented early.

Comment: Very good article about a complex problem.

22-085 Asymptomatic microscopic hematuria in adults: summary of the AUA Best Practice Policy Recommendations.

Grossfeld GD, Wolf JS, Litwin MS, et al. Am Fam Physician. 15 March 2001. Vol.63. No.6. p.1145-54.

Reviewed by Dr J R Elliott

Review: An American Urological Association policy panel convened to formulate recommendations for the evaluation of asymptomatic microhaematuria in adults. Microhaematuria is defined and although it has a presence in normal patients, there is a range which includes urological malignancies. The intermittent nature of the findings are emphasised. Appropriate renal investigations are outlined.

Comment: A good attempt to clarify investigations into an often incidental finding. No clarification as to when to test for it.

A good flow chart for renal investigation and a list of renal disease risk factors suggests investigate all at risk of renal disease and follow-up mandatory in patients when investigation deferred. Nothing here you will not know already but confirms the dilemmas. Investigate or follow-up all!

Lessons from H & D C opinions

(continued from page 7)

patient to receive a script for a third generation OC without specifically being seen to review the contraception options. In particular, this was at a time when very real concern was being expressed about the increased incidence of thrombotic events. The patient had been seen within that time but for intercurrent illness, and no mention was made of discussion re risks of third generation OCs.

2 The GP failed to specifically recognise the recommendations coming from the Ministry of Health (MOH) and should have insisted that the woman have a consultation specifically to discuss the risks and record weight and blood pressure.

Please note that:

1 The repeat script was issued at a time when a locum was in place on more than one occasion; and
2 The woman had been instructed at an earlier visit that she should attend the surgery for a well woman's check but never did.

This is a tragic case where a young person has died possibly as a result of being on a third generation OC. The GP argued strongly that, yes the system had failed to warn the patient and allow her to make an informed choice, but the patient had not followed up advice to attend for a check up and rang for a repeat prescription without choosing to have a consultation. The medical advisors to the HDC varied in their responses to this case and the decision to find against the GP was in part based on the advice of an epidemiologist who reviewed the information from the MOH at that time.

This is a landmark case and the full transcript should be reviewed at peer group meetings around the country. The transcript is available on the Commisioner's web site www.hdc.org.nz. Issues that may be discussed:

1 Who would be liable if the woman had attended as directed, the risks of the medication explained and chose to stay on the OC and subsequently died?
2 Rules concerning the issuing of repeat prescriptions at a practice level. What is safe practise in this area and how do we balance the need of the GP to ensure safe prescribing with the wish of the patient to avoid the cost and inconvenience of a consultation?
3 The liability of the prescribing GP where a patient chooses not to follow advice about attending for a consultation.

The Health and Disability Commissioner (H DC) considered:

1 Both the GP *and the medical centre* breached right 4(1) and (2) in that the GP did not review the medication, contraindications and risk factors to ensure that the pre-

(continues over page)

scription remained clinically appropriate.

The HDC considered that if a patient decides *not* to have her medication reviewed, it is clinically inappropriate to renew the prescription. He conceded that in some cases one month's cover might be appropriate to "tide a patient over".

The HDC opinion is based on the belief that although refusal to renew a prescription may lead to an unwanted pregnancy, that most women in this situation would use other forms of contraception.

The HDC considers that the practice policy for repeat prescriptions of the nurse ensuring that the patient had been seen by a GP in the past year was not sufficient to ensure that her medication had actually been reviewed in that consultation.

2 Both the GP *and the medical centre* breached Right 6(1)(b) (e), 6(2) and 7 (1) (Right to be fully informed) in that the GP has an *ongoing* responsibility to provide the patient with information that a reasonable person, in the patient's circumstances, would expect to receive when medication is reviewed. This includes *updated* information about the risks associated with the medication (in this case the third generation OC) that is different to the information that must be initially supplied before the patient decides to take the OC. The HDC considered that the patient did not make an informed decision in refusing to have her medication reviewed as new information had arisen in respect of her OC since she first went on it.

The actions resulting from the opinion were not as serious as the above case:

1 The GP write an apology to the patient.
2 The GP review their policy and practice in relation to prescribing oral contraceptives.

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