home treatment. These are patients with high thrombotic load (massive leg thrombosis or symptomatic pulmonary embolism); those at increased risk of bleeding (active bleeding, recent surgery, active peptic ulcer disease, advanced liver disease, thrombocytopenia, or familial bleeding disorder); those for whom regimens of low molecular weight heparin are poorly defined (body weight < 45 kg or > 100 kg, children, pregnant women, people with renal impairment); and those with a medical disorder that requires admission.

Secondly, successful home treatment requires adequate resources to establish a multidisciplinary clinical service with expertise in diagnosing and managing venous thromboembolism. This service should be capable of providing rapid clinical assessment, including identifying patients unsuitable for home treatment; diagnostic testing to confirm or refute the diagnosis; and home support when required. Patients should also be educated about venous thromboembolism and its complications, self injection with low molecular weight heparin, the potential complications of anticoagulant therapy, and how to access help, particularly outside working hours. Thirdly, despite the availability of effective therapies, venous thromboembolism remains a potentially fatal disease, and some patients will inevitably die during home treatment. Although there is no evidence of an excess of adverse outcomes or death in patients treated at home, the safety and effectiveness of home treatment programmes in individual centres need to be monitored.

John Eikelboom *consultant haematologist*

Ross Baker *consultant haematologist*

Thrombosis and Haemophilia Unit, Department of Haematology,
Royal Perth Hospital, Box X3312 GPO, Perth, Australia 6001
(john.eikelboom@health.wa.gov.au)

1 Hyers TM, Agnelli G, Hull RD, Morris TA, Samama M, Tapson V, et al.

- Antithrombotic therapy for venous thromboembolic disease. *Chest* 2001;119:176S-93.
- 2 Schwarz T, Schmidt B, Hohlein U, Beyer J, Schroder H-E, Schellong SM. Eligibility for home treatment of deep vein thrombosis: prospective study. *BMJ* 2001;322:1212-3.
- 3 Van Den Belt AG, Prins MH, Lensing AW, Castro AA, Clark OA, Atallah AN, et al. Fixed dose subcutaneous low molecular weight heparins versus adjusted dose unfractionated heparin for venous thromboembolism. *Cochrane Database Syst Rev* 2000;2:CD001100.
- 4 Dolovich LR, Ginsberg JS, Douketis JD, Holbrook AM, Cheah G. A meta-analysis comparing low-molecular-weight heparins with unfractionated heparin in the treatment of venous thromboembolism: examining some unanswered questions regarding location of treatment, product type, and dosing frequency. *Arch Intern Med* 2000;160:181-8.
- 5 Koopman MMW, Prandoni P, Piovella F, Ockelford PA, Brandjes DPM, van der Meer J, et al. Treatment of deep vein thrombosis with intravenous unfractionated heparin administered in the hospital as compared with subcutaneous low-molecular-weight heparin administered at home. *N Engl J Med* 1996;334:682-7.
- 6 Levine M, Gent M, Hirsh J, Leclerc J, Anderson D, Weitz J, et al. A comparison of low-molecular-weight heparin administered primarily at home with unfractionated heparin administered in the hospital for proximal deep-vein thrombosis. *N Engl J Med* 1996;334:677-81.
- 7 Belcaro G, Nicolaides AN, Cesarone MR, Laurant G, De Sanctis MT, Incandela L, et al. Comparison of low-molecular-weight heparin, administered primarily at home, with unfractionated heparin, administered in hospital, and subcutaneous heparin, administered at home for deep-vein thrombosis. *Angiology* 1999;50:781-7.
- 8 Bocalon H, Elias A, Chale JJ, Cadene A, Gabriel S. Clinical outcome and cost of hospital vs home treatment of proximal deep vein thrombosis with a low-molecular-weight heparin: the Vascular Midi-Pyrenees study. *Arch Intern Med* 2000;160:1769-73.
- 9 Bossuyt PMM, van den Belt AGM, Prins MH. Out-of-hospital treatment of venous thrombosis: socio-economic aspects and patients' quality of life. *Haemostasis* 1998;28:100-7.
- 10 Schafer AL. Low-molecular-weight heparin—an opportunity for the home treatment of venous thrombosis. *N Engl J Med* 1996;334:724-5.
- 11 Lindmarker P, Holmstrom M, and the Swedish Venous Thrombosis Dalteparin Trial Group. Use of low molecular weight heparin (dalteparin), once daily, for the treatment of deep vein thrombosis. A feasibility and health economic study in an outpatient setting. *J Intern Med* 1996;240:395-401.
- 12 Harrison L, McGinnis J, Crowther M, Ginsberg J, Hirsh J. Assessment of outpatient treatment of deep-vein thrombosis with low-molecular-weight heparin. *Arch Intern Med* 1998;158:2001-3.
- 13 Wells PS, Kovacs MJ, Bormanis J, Forgie MA, Goudie D, Morrow B, et al. Expanding eligibility for outpatient treatment of deep venous thrombosis and pulmonary embolism with low-molecular-weight heparin: a comparison of patient self-injection with homecare injection. *Arch Intern Med* 1998;158:1809-12.
- 14 O'Shaughnessy D, Miles J, Wimperis J. UK patients with deep-vein thrombosis can be safely treated as out-patients. *Quart J Med* 2000;93: 663-7.

Written information for treating minor illness

Alone, it's not very valuable—but we shouldn't expect it to be

General practice
pp 1214, 1218

Written information, particularly in the form of leaflets, has usually been seen as an adjunct to verbal information in the treatment of specific illnesses, such as back pain.¹ Two papers in this week's *BMJ* take this concept a stage further and investigate the use of patient information leaflets as prophylaxis against patients presenting with symptoms of minor illness.^{2,3} This exploration is welcome because, although leaflets are widely used, there is little evidence about their usefulness.

Written information may complement verbal messages, thus enhancing concordance and encouraging behaviour change.⁴ Patients will vary in the quantity of information they want, and the professional has a duty to deliver it at an appropriate level for each patient, while the Patients Charter's also states that patients have a right to be as informed as they wish.⁵ The quality of the written information, however, is not always ideal. One study showed that the British Thoracic Soci-

ety Guidelines could not be applied to 46% of 168 leaflets about asthma⁶ and 6% of the leaflets were actually inaccurate. There are no Cochrane reviews on this subject and only one systematic review (which focused upon the quality of written information available for patients with hypertension⁷). This review showed generally poor quality of information and poor presentation, and web based information has even wider variability.⁷

Given that there is little information on the usefulness of patient information leaflets, can we make inferences from similar areas? We know, for example, from guideline implementation that it is necessary to develop a multifaceted strategy to encourage implementation of guidelines. There is little evidence that passive dissemination alone effects a behaviour change. Such a multifaceted strategy must have regard for the local context and be accompanied by an effective process of monitoring and evaluation. There have been several

BMJ 2001;322:1193-4

exhaustive reviews of the literature on guideline implementation.⁸⁻¹⁰ The most recent of these⁸ not only looked at dissemination and implementation of guidelines but also reviewed the effectiveness of continuing medical education as a broad method of getting evidence into practice. The effectiveness of specific interventions was outlined. Interventions comprised dissemination of educational materials, educational outreach, local opinion leaders, audit and feedback, manual or computerised reminders, and computerisation. Apart from the limited effectiveness of passive dissemination, the overall conclusion was that most interventions are effective under some circumstances, none is effective under all.

The two papers in this week's issue are similar in design and show similar findings. Heaney et al's study (p 1218), including nearly 10 000 patients, was undertaken in Scotland and had three strategies.² Patients were sent either a booklet with information on 40 common health problems ("What should I do?"), a manual covering 50 common health problems, or nothing. No impact on consultation rates was found. Little et al's study (p 1214), included about 4000 patients in England who were sent either the "What should I do booklet," a summary card mainly covering acute respiratory illness, or simply the access times for the patient's surgery.³ Little et al showed a small reduction in the number of doctor-patient contacts in the groups sent the booklet and the summary card. Both groups of researchers conclude that these strategies have limited use in attempting to reduce the number of consultations for minor self limiting illness.

Should we be surprised by these findings? I would say no, in that the original concept has little face validity. It is unclear why receiving information about illness at a time when one is not ill should affect future behaviour. Is it likely that patients will actually keep the booklets or manuals as reference material for a time when they should become ill? Traditional general practitioner training emphasises the need for continuing modification of health seeking behaviour. This must be within the context of a consultation and seems more likely to succeed than simply providing patients

with information out of context. Similarly, there are so many sources of information now—television, newspapers and magazines, and the internet—that a scatter-gun approach is unlikely to have any great impact.

The research into guideline implementation shows that written information can be valuable as part of a multifaceted approach to managing specific conditions. Thus it may be inferred that written material may be useful as part of a multifaceted approach to modifying health seeking behaviour. This must therefore be context specific and take place within rather than without, or indeed completely detached from, the consultation. If this approach were to be taken we may find that behaviour in terms of not only consultation rates but also calls for out of hours or domiciliary visits might start to change. Whether this kind of research is feasible or attractive to funding agencies remains to be seen.

D A Fitzmaurice *senior lecturer*

Department of Primary Care and General Practice, Medical School,
University of Birmingham, Birmingham B15 2TT
(D.A.Fitzmaurice@bham.ac.uk)

- 1 Roland M, Dixon M. Randomised controlled trial of an educational booklet for patients presenting with back pain in general practice. *J R Coll Gen Pract* 1989;39:244-6.
- 2 Heaney D, Wyke S, Wilson P, Elton R, Rutledge P. Assessment of impact of information booklets on use of healthcare services: randomised controlled trial. *BMJ* 2001;322:1218-21.
- 3 Little P, Somerville J, Williamson I, Warner G, Moore M, Wiles R, et al. Randomised controlled trial of self management leaflets for minor illness provided by post. *BMJ* 2001;322:1214-7.
- 4 Gruninger UJ, Duffy FD, Goldstein MG. Patient education in the medical encounter: how to facilitate learning, behaviour change and coping. *The medical interview*. New York: Springer, 1994.
- 5 Department of Health. *Patient's Charter*. London: HMSO, 1991.
- 6 Smith H, Gooding S, Brown R, Frew A. Evaluation of readability and accuracy of information leaflets in general practice for patients with asthma. *BMJ* 1998;317:264-5.
- 7 Fitzmaurice DA, Adams JL. A systematic review of patient information leaflets for hypertension. *J Hum Hypertension* 2000;14:259-62.
- 8 NHS Centre for Reviews and Dissemination. Getting evidence into practice. *Effective Health Care Bulletin* 1999;5(1).
- 9 Wensing M, van der Weijden T, Grol R. Implementing guidelines and innovations in general practice: which interventions are effective? *Br J Gen Pract* 1998;48:991-7.
- 10 Oxman AD, Thomson MA, Davis DA, Haynes RB. No magic bullets: a systematic review of 102 trials of interventions to improve professional practice. *CMAJ* 1995;153:1423-31.

Protecting travellers from hepatitis A

Vaccine should be used for almost every occasion when prevention is required

Infection with hepatitis A virus, an RNA virus of the picornoviridae family, remains an important public health problem in many regions of the world and is probably the commonest vaccine-preventable disease in travellers to developing countries. Although the incidence of acute hepatitis A virus infection is falling in developed countries, outbreaks continue to be reported¹ and it remains the cause of half the cases of acute viral hepatitis notified in England and Wales. Recent changes in official advice on protective prophylaxis need to be incorporated into the advice clinicians give to travellers who may be at risk of infection.

Hepatitis A infection usually follows oral ingestion of virus, spread by faecal shedding from an infected

individual. The high seroprevalence of anti-hepatitis A virus antibodies in developing countries (more than 70% of adults), is largely due to a high rate of asymptomatic infection in childhood. As improved sanitation has led to less childhood infection in developed countries (less than 2% of 5-14 year olds are now seropositive in the United Kingdom²), fewer adults are now naturally immune, so a higher proportion of travellers are at risk of infection while abroad. Although the total number of cases of hepatitis A reported to the Public Health Laboratory Service in the UK has declined, the percentage of cases associated with a history of travel has risen from 7.6% in 1990 to 13.7% in 1998 (www.phls.co.uk/facts/hepat7.htm). Infection in adult-

BMJ 2001;322:1194-5