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Advising patients with genital herpes

Aciclovir reduces asymptomatic viral shedding, but effect on transmission is unclear

The traditional view of genital herpes is that it is a low prevalence sexually transmitted disease, principally caused by herpes simplex virus type 2.[1] However, the new type specific antibody tests, which can accurately distinguish between antibodies to herpes simplex virus type 1 and type 2, have shown that infection with herpes simplex virus type 2 is not only common[2-4] but often goes unrecognised—only about a third of those infected are diagnosed.[3 5] Among patients in Britain presenting with a first episode of genital herpes, infection due to herpes simplex virus type 1 is common, accounting for 20-60% of cases.[6-8]

Genital herpes is often associated with considerable psychosexual morbidity, particularly around the time of initial diagnosis.[9] A major concern for infected people is that they may infect their sexual partners.[10] In the past, patients were reassured that this could happen only if they had sex during episodes of acute genital blistering and ulceration.[11 12] Recent data from epidemiological, natural course, and antiviral studies suggest that this advice may be misleading. In one of the few prospective studies of transmission of genital herpes, Mertz *et al* showed that the mean transmission rate was 9.7% a year, with higher rates when the exposed partner was female or was previously uninfected with herpes simplex virus of either type: for women who had not previously been exposed, the annual transmission rate from male partners was 31.8%.[13] Seventy per cent of these transmissions occurred as a result of sexual contact during periods of presumed subclinical viral shedding.

Two studies recently published by workers in Seattle have increased our understanding of the pattern of genital herpes transmission. These not only improve our knowledge of the epidemiology of genital herpes per se but also have implications for how we should advise patients with genital herpes.

In the first of these—a prospective cohort study, Wald *et al* examined the frequency of symptomatic and subclinical shedding of herpes simplex virus among 110 women with a history of genital herpes.[14] Subjects took daily specimens for viral culture from their vulva, cervix, and rectum. Subclinical shedding—viral shedding not associated with genital lesions — occurred in 55% of women with herpes simplex virus type 2, 52% of women with both types, and 29% of women with herpes simplex virus type 1 during the study period. The median follow up was 105 days (range 5-799). The median number of days during which virus shedding was recorded was 1.1% (range 0-11.4%), 0.6% (range 0-10.3%), and 0% (range 0-2.8%) respectively. Half of the episodes of subclinical shedding occurred within seven days of a symptomatic recurrence. Subclinical viral shedding was more common among women with frequently recurring herpes (more than 12 symptomatic recurrences a year) or who had acquired their infection in the previous year.

In the second study—a randomised, double blind, placebo controlled crossover trial—Wald *et al* showed that women with recurrent genital herpes who took continuous suppressive aciclovir treatment not only reduced their likelihood of symptomatic recurrence but also had fewer days of subclinical virus shedding than when they took placebo.[15] (The number of days of subclinical viral shedding for subjects taking aciclovir was six out of 1611 (0.4%) compared with 83 out of 1439 (5.8%) for those taking placebo.) The study did not seek to establish whether this reduction in viral shedding equated with a reduction in the risk of sexual transmission of the virus.

Both of these studies were done in highly motivated women (evidenced by their willingness to take daily genital swabs for a median of 105 days). There is no published information available on subclinical shedding in men or in people who have antibodies to herpes simplex virus but are asymptomatic. In addition, there is some concern that the frequent genital swabbing for viral culture required in these studies may have increased the rate of viral shedding.

How should these studies affect the management of patients and their partners? Firstly, it is still appropriate to tell patients that they are could infect their sexual partners at the time they have clinical symptoms of herpes and that they should avoid sexual contact during this time. Given that subclinical shedding was commonly detected around the time of symptomatic recurrences, patients should abstain from genital contact when they have prodromal or early or minor genital symptoms. Secondly, patients should be advised that viral shedding may occur without accompanying genital symptoms. However, it should be stressed that in about half of the women in Wald *et al*'s study no subclinical shedding was detected at all and that, in those who did shed virus, shedding was detected on only a few days overall.[14] Infected patients with infrequent clinical recurrences can be reassured that subclinical shedding is uncommon.

The information on the effect of aciclovir on subclinical shedding is more difficult to interpret, particularly as it is unclear how closely the detection of

herpes simplex virus type 2 in the genital tract of asymptomatic people correlates with their risk of transmitting the virus to their sexual partner. While we know that daily aciclovir is a safe, well tolerated, and effective means of suppressing symptoms,[16] it is expensive. What is more, there is no evidence from which to reassure patients taking continuous aciclovir that they will not shed virus while receiving treatment. Further studies are needed to clarify the role of antiviral treatment in preventing transmission. These must look not only at the efficacy of treatment in practice—in studies which control for use of condoms, drug compliance, and susceptibility of partners to infection—but also at the economic consequences and the effect on quality of life for patients and their sexual partners, if they are to succeed in influencing the management of this infection in individual patients.

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1 Dowdle WR, Nahmias AJ, Harwell RW, Pauls FP. Association of antigenic type of Herpesvirus hominis with site of viral recovery. *J Immunol* 1967;99:974-80.
2 Johnson RE, Lee F, Hadgu A, McQuillan G, Aral SO, Keesling S, *et al.* US genital herpes trends during the first decade of AIDS: prevalences increased in young whites and elevated in blacks. *Sex Trans Dis* 1994;21:S109.
3 Cowan FM, Johnson AM, Ashley R, Corey L, Mindel A. Antibody to herpes simplex virus type 2 as serological marker of sexual lifestyle in populations. *BMJ* 1994;309:1325-9.
4 Ades AE, Peckham CS, Dale GE, Best JM, Jeansson S. Prevalence of antibodies to herpes simplex virus types 1 and 2 in pregnant women, and estimated rates of infection. *J Epidemiol Commun Health* 1989;43:53-60.
5 Koutsky LA, Ashley RL, Holmes KK, Stevens CE, Critchlow CW, Kiviat N, *et al.* The frequency of unrecognized type 2 herpes simplex virus infection among women. *Sex Trans Dis* 1990;17:90-4.
6 Barton IG, Kinghorn GR, Najem S, Al-Omar LS, Potter CW. Incidence of herpes simplex virus types 1 and 2 isolated in patients with herpes genitalis in Sheffield. *Br J Vener Dis* 1982;58:44-7.
7 Ross JDC, Smith IW, Elton RA. The epidemiology of herpes simplex types 1 and 2 infection of the genital tract in Edinburgh 1978-1991. *Genitourin Med* 1993;69:381-3.
8 Scoular A, Leask BGS, Carrington D. Changing trends in genital herpes due to herpes simplex virus type 1 in Glasgow, 1985-88. *Genitourin Med* 1990;66:226-8.
9 Carney O, Ross E, Bunker C, Ikkos G, Mindel A. A prospective study of the psychological impact on patients with a first episode of genital herpes. *Genitourin Med* 1994;70:40-5.
10 Catotti DN, Clarke P, Catoe KE. Herpes revisited. Still a cause of concern. *Sex Trans Dis* 1993;20:77-80.
11 Robertson DHH, McMillan A, Young H. *Clinical practice in sexually transmissible diseases.* Tunbridge: Pitman Medical, 1980.
12 Genital herpes simplex—a self help guide. Hayward Medical Communications, 1993.
13 Mertz GJ, Bemedetto J, Ashley R, Selke SA, Corey L. Risk factors for the sexual transmission of genital herpes. *Ann Intern Med* 1992;116:197-202.
14 Wald A, Zeh J, Selke S, Ashley RL, Corey L. Virological characteristics of subclinical and symptomatic genital herpes infections. *N Engl J Med* 1995;333:770-5.
15 Wald A, Zeh J, Barnum G, Davis LG, Corey L. Suppression of subclinical shedding of herpes simplex virus type 2 with acyclovir. *Ann Intern Med* 1996;124:8-15.
16 Whitley RJ, Gnann JW Jr. Acyclovir: a decade later. *N Engl J Med* 1992;32:782-9.

Setting priorities New Zealand-style

We can learn from it

What is the best way to ration health services? We have had debate: between those who argue that the government should define a package of services available on the NHS[1] and those who instead prefer fuzziness—leaving rationing decisions largely up to clinicians.[2] But whatever the services available, there is general agreement that more could be done to ensure that effective treatments are provided.

The approach taken by the British government has been mixed. On the one hand it has decided not to define a list of core services available on the NHS and has left it up to purchasers to decide.[3] To help, it has provided information to purchasers on the effectiveness of a range of treatments.[4] On the other, it has developed several policies with direct bearing on rationing, such as curtailing free eye testing on the NHS, allowing adult dentistry to drift out of the NHS, and requiring purchasers to meet specific waiting time and productivity targets for inpatient care regardless of the urgency or likely effectiveness of treatment in individual cases. The result has been haphazard access to care depending on where you live, and policies aimed at maximising effectiveness coupled with those likely to undermine it. Is there a way forward we can all agree on? New Zealand may have found one.

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New Zealand has a similar health service to Britain's: largely publicly funded and, since 1992, with a split between public purchasers and public providers. At that time a committee was set up, now called the National Health Committee, to examine rationing. The committee soon dropped the idea of defining an Oregon style national core minimum package,[5] arguing that few treatments were ineffective in all patients and exclusions would be unfair to the patients who may benefit.[6] Instead, as in Britain, purchasers are largely free to purchase services (or not) as they see fit.

But the National Health Committee did not stop there. It wanted to ensure that the treatments purchased were the most effective. The problem of long waiting lists for elective procedures prompted the committee to develop priority criteria to encourage treatment of the most needy patients first, instead of "the squeaky wheel getting the oil."[7 8] The criteria take into account clinical factors (such as severity of illness and effectiveness of treatment), which were drawn up by clinicians, and social factors (such as ability to work and to care for dependents), which were developed partly by members of the public. Higher priority patients attract a higher points score, which helps clinicians to decide (and patients to expect) who should be

treated and when, and who should not. Interestingly, the length of wait was not deemed to be a priority criterion, in contrast to current NHS policy.

This initiative is highly relevant to Britain. The loose relation between severity of illness and waiting time demonstrated in the NHS[9 10] merits further scrutiny, and the New Zealand experience shows how this could be done systematically and with support from clinicians. Given that there is already an NHS research and development initiative promoting effectiveness and evidence based practice, encouraging local providers to develop priority criteria for specific services could be a next step, as already pioneered in Salisbury.[11 12]

But a few words of caution. Firstly, there are important questions about which clinical and social factors to include and how best to weight them. Any local criteria may conflict with national priorities (such as the imperative to keep waiting times below one year) and vice versa. Secondly, the New Zealand initiative helps to set priorities for demand within specified services but does not offer help about the appropriate mix of services, including whether some should be off the NHS menu. Thirdly, this approach may not be useful to lever more funds for health care: in New Zealand the level of funding dictates the number of points at which a patient can expect treatment rather than the reverse.[6 8] Fourthly, if the basic aim is to maximise the health benefit from available funds, then the cost effectiveness of treatments, rather than just effectiveness, should be considered. Finally, the implication is that patients not achieving the required number of points are returned to their general practitioners for management. But this may increase the already high demands made on general practice, and ultimately result in higher costs of treatment.

These caveats apart, New Zealand shows where we could make a start. In the NHS it may even encourage a welcome shift of emphasis away from the counterproductive cycle of increasing hospital activity, and the inflexible use of waiting time to rank demand, towards increasing efficiency instead.

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1 New B, Le Grand J. *Rationing in the NHS: principles and pragmatism*. London: King's Fund, 1996.
2 Mechanic D. Dilemmas in rationing health care services: the case for implicit rationing. *BMJ* 1995;310:1655-9.
3 Department of Health. *The National Health Service: a service with ambitions*. London: HMSO, 1996.
4 Department of Health. *Improving the effectiveness of the NHS*. Leeds: NHS Executive, 1994 September 28. (EL(94)74.)
5 Dixon J, Welch HG. Priority setting: lessons from Oregon. *Lancet* 1991;337:891-4.
6 Cummings J. Defining core services: New Zealand experiences. *J Health Serv Res Policy* 1997;314:131-4.
7 Hadorn DC, Holmes A. The New Zealand priority criteria project. Part I: Overview. *BMJ* 1997;314:131-4.
8 Hadorn DC, Holmes A, Banchy A, O'Connor P. The New Zealand priority criteria project. Part II: Coronary artery bypass surgery. *BMJ* 1997;314:135-8.
9 Pope CJ, Roberts JA, Black NA. Dissecting a waiting list. *Health Serv Manage Res* 1991;4:112-9.
10 Clinical Standards Advisory Group. *Access to and availability of coronary artery bypass grafting and coronary angiography*. London: HMSO, 1993.
11 Lack JA, Armand Smith NG. Setting priorities for surgical waiting lists [letter]. *BMJ* 1995;311:811.
12 Tudor Edwards R. An economic perspective of the Salisbury waiting list points scheme. In: Malek M, ed. *Setting priorities in health care*. Chichester: John Wiley, 1994.

Hypoplastic left heart syndrome

Terminal care is not the only option

Hypoplastic left heart syndrome is not an uncommon condition and accounts for about 10% of critical congenital heart disease in infants. Each year in Britain about 200 children will be born with this condition, which, unlike some other congenital cardiac lesions, usually occurs without serious associated non-cardiac malformations. Hypoplastic left heart syndrome in its most common form consists of an underdeveloped left ventricle, mitral valve, and aortic root. Initially, systemic blood flow is maintained by the patent ductus arteriosus, and death occurs soon after this closes. Most children born with hypoplastic left heart syndrome in Britain will be managed with terminal supportive care, very few will present to cardiac surgeons (M Elliott, personal communication). Newborn infants with other complex congenital cardiac malformations—such as pulmonary atresia with intact ventricular septum—can usually expect corrective or palliative surgery with a reasonable likelihood of a satisfactory outcome. Why then are children with hypoplastic left heart syndrome still singled out for terminal care? Is there any evidence that surgery for these children is a reasonable proposition?

It is over 15 years since Norwood described a surgical technique for repair of hypoplastic left heart syndrome.[1] During this time modifications have resulted in three staged surgical procedures that ultimately allow the right ventricle to act as the systemic chamber and produce separation of the pulmonary and systemic blood flow by the performance of a Fontan procedure. Although there has been interest in the surgical palliation of hypoplastic left heart syndrome in the United States for some time, this has not yet been the case in Britain. With the publication last year of the results of surgical palliation at the Birmingham Children's Hospital,[2] interest may be growing, although many paediatric cardiac centres may still need to be convinced of the value of this course of management.

In several centres in the United States surgical palliation for hypoplastic left heart syndrome has been justified both in terms of survival and quality of life.[3-5] The terminal care approach has been effectively challenged, with parents and physicians coming to expect a more positive outlook. It is important to stress that—with increasing experience and modification of

surgical, anaesthetic, and intensive care techniques—survival figures have improved considerably over time. In our own centre, five year actuarial survival for 127 neonates with classic hypoplastic left heart syndrome—born without complicating factors such as severe pulmonary venous obstruction or important congenital non-cardiac conditions and who undergo first stage repair at less than one month of age—is currently in the order of 70%.[6 7] The oldest survivors are now between 10 and 12 years of age. These children remain active and attend school. Although difficult to quantify, there is no reason to suppose that the quality of life for these children differs substantially from that of children born with other forms of single ventricle who undergo surgical palliation.

Surgical palliation is not the only management option for hypoplastic left heart syndrome. Some centres perform heart transplantation for these children. Results of transplantation are comparable to surgical palliation in terms of survival.[8 9] However, when mortality after transplantation is combined with the mortality of children waiting for a donor heart the figures are less encouraging. With the shortage of suitable donors, it seems unlikely that transplantation will result in overall superior survival rates for these children.

Survival figures are not the only criteria on which the value of surgical intervention is judged. Questions concerning the prevalence of residual morbidity in this surgical population remain. Although no special problems have been identified in this group of patients, long term cardiopulmonary and neurodevelopmental outcomes have not yet been adequately established, given the ages of the oldest survivors. However, if, as we suspect, long term outcomes are at least as good as those associated with other complex cardiac lesions, should there be any question that surgical palliation of hypoplastic left heart syndrome is an equally appropriate course of action? Realistically it might be relevant to ask whether paediatric cardiac centres have the resources and willingness to initiate an intensive therapeutic programme, especially when the initial period of such a programme may involve setbacks and disappointments. Once surgical palliation is initiated, parents and children are committed to multiple procedures and invasive diagnostic studies. This requires a substantial degree of emotional and physical stamina; some families will cope better than others. Yet for those who have seen the success of surgical palliation for hypoplastic left heart syndrome and witnessed the joy of parents, as well as the continued wellbeing of their children, it is difficult to avoid enthusiasm for this approach and impossible to ignore the outcome.

Hypoplastic left heart syndrome presents a considerable challenge to all those involved in the management of congenital cardiac malformations; but in the light of continued improvement of surgical palliation—with outcomes as good as, if not better than, those of other congenital cardiac lesions—it may be an appropriate time for the medical community to rethink its approach to children born with this condition. Parents and doctors should be aware of the possibilities of treatment. Simply letting these children die from their malformation may no longer be an option that is easily justified.

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1 Norwood WI, Kirklin JK, Sanders SP. Hypoplastic left heart syndrome: experience with palliative surgery. *Am J Cardiol* 1980;45:87-91.
2 Bu'lock FA, Stumper O, Jagtap R, Silove ED, De Giovanni JV, Wright JG, *et al.* Surgery for infants with a hypoplastic systemic ventricle and severe outflow obstruction; early results with a modified Norwood procedure. *Br Heart J* 1995;73:456-61.
3 Jonas RA, Lang P, Hansen D, Hickey P, Castaneda AR. First-stage palliation of hypoplastic left heart syndrome. The importance of coarctation and shunt size. *J Thorac Cardiovasc Surg* 1986;92:6-13.
4 Meliones JN, Snider AR, Bove EL, Rosenthal A, Rosen DA. Longitudinal results after first-stage palliation for hypoplastic left heart syndrome. *Circulation* 1990; 82(5 suppl):IV151-6.
5 Iannettoni MD, Bove EL, Mosca RS, Lupinetti FM, Dorostkar PC, Ludomerski A, *et al.* Improving results with first-stage palliation for hypoplastic left heart syndrome. *J Thorac Cardiovasc Surg* 1994;107:934-40.
6 Lloyd TR. Prognosis of the hypoplastic left heart syndrome. *Prog Pediatr Cardiol* 1996;5:57-64.
7 Bove EL, Lloyd TR. Staged reconstruction for hypoplastic left heart syndrome: contemporary results. *Ann Surg* (in press).
8 Chiavarelli M, Gundry SR, Razzouk AJ, Bailey LL. Cardiac transplantation for infants with hypoplastic left heart syndrome. *JAMA* 1993;270:2944-7.
9 Backer CL, Zales VR, Harrison HL, Idriss FS, Benson DW, Mavroudis C. Intermediate term results of infant orthotopic cardiac transplantation from two centers. *J Thorac Cardiovasc Surg* 1991;101:826-32.

"I've just been bitten by a dog"

Surgical toilet, appropriate antibiotics, and advice to come back if infection develops

Mammalian bites have a sinister reputation for causing tissue damage and infection. Although human bites have the greatest potential for local injury—because of the varied and virulent flora of pathogenic organisms in the mouth and the propensity for association with a crush injury—dog bites are numerically the most common.[1] They account for 1-2 million injuries in America each year[2] and about 200 000 cases in Britain.[3] In addition, many victims regard their injury as too insignificant to seek medical help initially. A small number may then go on to develop overwhelming systemic infection, as reported in this week's *BMJ* by Mellor *et al* (p 129).[4] This suggests that dog bites can only be regarded as trivial in retrospect. What then should be the advice to patients, general practitioners, minor injuries units,

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and accident and emergency departments in terms of safe guidelines for management?

The treatment of dog bites is twofold: proper surgical toilet and appropriate antibiotic treatment where indicated. Wound toilet remains the mainstay of treatment of all bite injuries, whether this means adequate cleaning of a superficial wound by the patient at home or the full exploration, debridement, and irrigation of a more extensive injury under local, regional, or general anaesthesia. The question of whether to close the wound depends on the age, site, and nature of the injury. Many bite wounds include a substantial crush injury and potentially heavy contamination with organisms from the dog's mouth. These should be closed by delayed primary suture. Wounds of the face, including the scalp and ear, where the blood supply is excellent and the incidence of infection low, can safely be closed primarily after thorough cleaning and removal of any dead or devitalised tissue. Wounds elsewhere should be carefully assessed on the basis of time elapsed since the bite and the extent of crush injury. When the wound is recent—less than six to eight hours old—and the degree of crush injury is minimal—as elicited from a careful history of the mechanism of the bite—it may be safe to consider primary closure after thorough cleaning and irrigation. When the wound is older and clearly contused with a major crush element, delayed primary closure is the treatment of choice.

What of the role of antibiotics? Many accident and emergency departments prescribe prophylactic antibiotics routinely for all bites. However, American studies have suggested that, although antibiotics reduce the incidence of infection, 14 patients may have to be treated to prevent one infection.[5] Given the cost implications and the likely poor compliance of many patients, this may not be justified. An American study in 1996, which used careful exclusion criteria, suggested that low risk wounds from dog bites carried no greater risk of infection if prophylactic antibiotics were not used, though proper wound toilet was emphasised.[6] It is possible to identify high risk wounds and patients that indicate use of prophylactic antibiotics no matter how apparently insignificant the injury. For wounds, the following are clearly high risk injuries: wounds more than eight hours old, crush or puncture wounds, and wounds to the hands or feet. Wounds which have been closed primarily should, in my view, be covered with prophylactic antibiotics. However, this should clearly be in addition to, not instead of, thorough wound toilet. For patients, high risk is associated with age over 50 years, female sex, alcoholic liver disease, asplenism, immunosuppression, and immunological compromise.

If antibiotics are prescribed the most appropriate is co-amoxiclav 500/125 (375 mg) three times daily for five days. For patients who are allergic to penicillin, doxycycline 200 mg daily is suggested, or erythromycin for children under the age of 12 and pregnant or breast feeding mothers.[7] These regimens will cover the most common infecting organisms — *Pasteurella multocida*, streptococcal species, anaerobes, and *Staphylococcus aureus*—as well as other common commensals of the dog's mouth, such as *Capnocytophaga canimorsus*, which rarely cause infection. Erythromycin is the least effective drug. All patients, however they are treated or advised, should be warned of the signs of developing infection and told who to contact for further assessment.

Would adherence to such guidelines prevent cases such as that described in this journal? A handful of such cases, relating to infection with *Capnocytophaga canimorsus*, have been described in the past five years.[8-10] This is a well recognised risk in asplenic or immunocompromised patients,[11 12] but other cases have occurred in middle aged or elderly victims who were otherwise in good health (Garrard C, personal communication). In the cases described, however, the patients would have fallen into high risk groups if medical advice had been sought. The organism is slow growing and not always easy to culture, and several cases have initially been diagnosed clinically as meningococcaemia, so the real incidence may be higher.

A patient's tetanus immunisation status should also be checked and updated if necessary. Given the much greater general access to foreign travel, patients should be reminded that rabies continues to flourish beyond our shores and that they should seek advice if they sustain an animal bite or lick to an open wound when abroad.

In summary, patients should be made aware of the potentially harmful effects of even apparently trivial injuries, particularly if they are dog owners in high risk groups, and so should their medical and nursing attendants. While the importance of proper treatment of minor or moderate dog bites in terms of proper public and professional education should be highlighted, it may be appropriate to consider the problem of potentially life threatening injuries from dog bites. Two further cases were recently reported in the national press (*Daily Telegraph*, 30 November 1996) involving two babies, of three days and two weeks of age respectively. Children, particularly those under the age of 5 years, are particularly at risk,[13] especially with injuries to the head and neck, and the perpetrators are often medium sized or large dogs familiar to the family. Targeting patients with information about the potential problems arising from apparently trivial bite injuries should perhaps be linked to the possible prevention of more serious injury to a section of the population who are least able to protect themselves from the unwanted attention of "man's best friend."

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1 Moore EE, Mattox KL, Feliciano DV. Wounds, bites and stings. *Trauma* 1991;46:735.
2 Lewis KT, Styles M. Management of cat and dog bites. *Am Fam Physician* 1995;52:479-85.
3 Baxter DN. The deleterious effects of dogs on human health: dog associated injuries. *Common Med* 1984;6:29-36.
4 Mellor DJ, Bhandari S, Kerr K, Bodenham AR. Man's best friend: life threatening sepsis after minor dog bite. *BMJ* 1996;313:129-30.
5 Cummings PI. Antibiotics to prevent infection in patients with dog bite wounds: a meta-analysis of randomised trials. *Ann Emerg Med* 1994;23:535-40.
6 Dire DJ, Hogan DE, Walker JS. Prophylactic oral antibiotics for low-risk dog bite wounds. *Pediatr Emerg Care* 1992;8:194-9.
7 Ealing, Hammersmith and Hounslow Health Authority. *Guidelines on the use of anti infectives*. EHHHA: Drug and Therapeutic Advisory Group, 1996.

8 Hantson P, Gautier PE, Vekemans MC, Fieviz P, Evrard P, Wauters G, *et al. Fatal capnocytophaga canimorsus septicemia in a previously healthy woman. Ann Emerg Med 1991;20:93-4.*
9 Gallen IW, Ispahani P. Fulminant capnocytophaga canimorsus (df 2) septicaemia. *Lancet* 1991;337:308.
10 Kristensen KS, Winthereik M, Rasmussen IVIL. Capnocytophaga canimorsus infection after dog-bite. *Lancet* 1991;337:849.
11 Williams DN, Kaur B. Postsplenectomy care. Strategies to decrease the risk of infection. *Postgrad Med* 1996;100:195-8, 201, 205.
12 Ndon JA. Capnocytophaga canimorsus septicemia caused by a dog bite in hairy cell leukemia patient. *J Clin Microbiol* 1992;30:211-3.
13 Brogan TV, Bratton SL, Dowd MD, Hegenbarth MA. Severe dog bites in children. *Pediatrics* 1995;96:947-50.

Meeting the information needs of health workers in developing countries

A new programme to coordinate and advise

Health workers in the developing world are starved of the information that is the lifeblood of effective health care.[1 2] As a direct result, their patients suffer and die. In the words of the late James Grant, former executive director of Unicef, "The most urgent task before us is to get medical and health knowledge to those most in need of that knowledge. Of the approximately 50 million people who were dying each year in the late 1980s, fully two thirds could have been saved through the application of that knowledge."[2]

Providing access to reliable health information for health workers in developing countries is potentially the single most cost effective and achievable strategy for sustainable improvement in health care. Cost effective because the amounts of money required are negligible compared with those invested in health services. Achievable because providers of health information have the will and commitment to make it happen, and because information technology presents exciting new opportunities to complement conventional methods of dissemination. And sustainable because information access is the sine qua non of the professional development of all health workers—the most vital asset of any healthcare system.

In 1994 and 1995 the *BMJ* hosted international meetings to look for ways to improve the dissemination of health information to, from, and within the developing world.[1] The meetings showed that the overall impact of providing health information would be greatly enhanced by increased coordination, analysis, and funding. A new programme was needed to serve as a point of reference for those who supply and receive information, to build a global picture of their activities and needs, and to argue their case with others. This programme is now being introduced within an existing non-profit organisation, the International Network for the Availability of Scientific Publications (INASP). Founded in 1991 by the International Council of Scientific Unions, INASP is a cooperative network of providers and recipients of science information, promoting the exchange of quality information (both printed and electronic) between and within the developed and developing world.

The new programme, INASP-Health, serves three main functions. Firstly, it provides a referral and advisory service for information providers and potential recipients. For example, institutions seeking health information can approach INASP directly and be put in touch with the organisations most likely to help. INASP-Health acts as a catalyst for new collaborations and initiatives and will soon be launching a dedicated email discussion list to facilitate cooperation and debate.

Secondly, INASP-Health aims to build a global picture of health information priorities in the developing world and the most appropriate ways of addressing them. It is developing a specialised database of needs assessments, evaluations of cost effectiveness, and other material related to the provision of health information. These data will be made freely available to help with the planning and setting up of new programmes, to provide support for funding applications, and to help develop future strategies.

The third function of INASP-Health is advocacy, both at a specific and a general level. For example, it works with organisations such as the Association for Health Information and Libraries in Africa (AHILA) to promote their needs to a wider audience, negotiating with publishers and others on their behalf. On a wider scale, INASP-Health will work increasingly with international organisations like the World Health Organisation and World Medical Association and with governments and funding agencies to promote the development of cost effective strategies and to strengthen political and financial commitment.

INASP-Health aims to ensure that the developing world does not get left behind by the information revolution. Rather, it wants to harness the enormous potential to provide the developing world with the information that for too long it has lacked.

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1 Kale R. Health information for the developing world. *BMJ* 1994;309:939–42.
2 Grant J. Opening session, world summit on medical education, Edinburgh 8–12 August, 1993. *Med Educ* 1994;28(suppl 1):11.