

Sadly for patients with stroke, the heart attack doctors are not just in the lead, they are out of sight evaluating and now establishing intra-arterial chemical and physical approaches to unblocking the pipes—fast. Maybe brain doctors have been a bit too clever, deflected into seeking the holy grail of neuroprotection—expensive and, so far, unsuccessful. Basic plumbing should come first.

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## “Schools and hospitals” for “education and health”

*General practice, not hospital care, accounts for most of the health service*

The phrase “schools and hospitals” is repeated almost every week. Whether it is in a speech to the Labour party conference, or this week in a speech to the party faithful in north London, the British prime minister’s shorthand phrase for “education and health” is always “schools and hospitals.” Perhaps this isn’t entirely surprising. After all, about 80% of any healthcare budget goes into secondary care, and the potential for dramatic glory as well as disaster is often concentrated within hospitals.

However, secondary care is not the health service. Far from it. In the United Kingdom about 90% of the work of the health service is carried out in primary care. In one recent year 268 million consultations with general practitioners were made,<sup>w1</sup> and satisfaction rates with general practitioners are high—91% according to a survey organised by the Cabinet Office.<sup>w2</sup> Despite the complexity, importance, and emotional context of consultations with general practitioners, only one formal complaint is made for every 70 000 consultations.<sup>w3</sup>

This undervaluing of primary care is puzzling. In the 10 years from 1991 to 2001 the number of hospital doctors in the United Kingdom increased by 60%,<sup>w4</sup> whereas the number of general practitioners was almost static.<sup>w5</sup> However, hospital death rates are even more closely related to the number of general practitioners than to the number of hospital doctors, according to a major study that showed that, to reduce deaths in hospital by 5000 per year, the NHS would need either 9000 more hospital doctors or 2300 more general practitioners,<sup>1</sup> which makes the current workforce figures all the more worrying.

Why should general practice have such a major effect on the national health? There can be little doubt that keeping patients away from hospital, except when it is essential, is generally good for them. General practitioners not only see huge numbers of patients but they also absorb huge levels of risk and uncertainty. Every computer contains a device known as a heat sink. The heat sink seems to do little other than absorb the heat in the system. It doesn’t

compute, calculate, or display. But if you take it away, the system crashes.

General practice is the heat sink of the NHS, absorbing both risk and workload. Generally, referral rates are low. On average, only five patients are referred to secondary care services for every 100 consultations, equivalent to 12 referrals per 100 registered patients per year.<sup>2</sup> An experienced general practitioner is likely to know when a headache needs an urgent investigation, and when it is a result of “dis-ease” or unhappiness in the patient’s life. No doctor will always get this right every time, but the high rates of satisfaction and the low rates of complaints point to a high level of skill.

General practitioners working in emergency units are less likely to investigate or admit patients compared with junior hospital doctors.<sup>3</sup> In a study in the United States, men aged 55 and older were randomised to primary care, with or without continuity of provider. Among the men who were randomised to continuity of provider fewer emergency admissions to hospital were noted, as were shorter hospitalisations and greater satisfaction.<sup>4</sup> In addition, the seminal work of Barbara Starfield on international comparisons of health care has shown that the more orientation to primary care a healthcare system has the higher the patient satisfaction with the system, the lower the overall expenditure on health care, the better the population health indicators, and the fewer prescribed drugs taken per head of population.<sup>5-8</sup>

Part of the traditional success of general practice has come from the long term relationship that is formed between patient and doctor. Continuity of care is perceived by many patients to be deeply important and is associated with the development of trust by patients.<sup>9</sup> Doctors who know their patients are less likely to admit or investigate them,<sup>10</sup> and, of course, the therapeutic relationship between general practitioners and their patients entails a great deal more than simply the avoidance of risk. The current accent on the importance of rapid access to primary health care will hopefully not dilute continuity—although the risk is that the increase in part time working by doctors, and



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more flexible patterns of working in society as a whole, may make this inevitable.

Morale for many general practitioners is poor.<sup>11 12</sup> Low morale is both a cause and a result of increased stress. In any organism, person, organisation, or even country stress leads to paranoia. Paranoia leads to defensive behaviour, and the chief result of defensive behaviour in doctors is an inevitable increase in investigation and referral.

The delivery of the NHS Plan depends absolutely on referral patterns of general practitioners remaining the same, or falling. Undervaluing the skills of general practitioners, assuming that most apparently simple consultations can be carried out by other primary care team members, and moving more secondary care procedures into primary care may have exactly the opposite outcome. The choice of which member of the team is consulted must be the patient's, not the system's. With adequate resources, it is entirely logical for primary care teams to take on much more of the work of the NHS, perhaps ending some of the duplication and tribalism that has resulted from the divide between primary and secondary care. But without adequate resources, time, and teams the opposite will occur. An increase in referrals will show just what an effective risk sink British general practice has been for many years. But, like the heat sink, you will only notice it when it fails.

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## Old drugs for new bugs

*Anecdotes suggest that some bacteria have lost their resistance to older antibiotics*

Recent reports have lent support to the potential use of previous generation antibacterial drugs to treat infections caused by new resistant bacteria. The *Morbidity and Mortality Weekly Report* recently described two isolates from the United States of vancomycin resistant *Staphylococcus aureus* with a minimum inhibitory concentration  $\geq 32$   $\mu\text{g/ml}$ , both of which were found to be sensitive in vitro to co-trimoxazole as well as to other older antimicrobials.<sup>1 2</sup> Co-trimoxazole was successfully used to treat one of these patients.<sup>1</sup> Unpublished data from our institution and elsewhere<sup>3</sup> show that in the last 15 years isolates of methicillin resistant *S aureus* (MRSA) have progressively, and by now almost universally, become susceptible to co-trimoxazole. Preliminary data indicate that this drug can be used as an alternative to vancomycin to treat infections due to MRSA<sup>4</sup> and include a case report about co-trimoxazole being used successfully to treat a patient with endocarditis that failed to respond to linezolid.<sup>5</sup>

Chloramphenicol, a drug introduced 50 years ago and essentially abandoned in the past three decades, has been reintroduced recently to treat severe infections caused by vancomycin resistant enterococci.<sup>6</sup> A report from India describes the re-emergence of susceptibility to chloramphenicol in *Salmonella typhi* isolates that are increasingly resistant to quinolones and  $\beta$  lactams.<sup>7</sup> The authors suggest reintroducing this drug to treat typhoid fever.

In a recent report from France, Stein and Raoult used colistin, an old and rarely used antibiotic, to treat bone infections caused by a strain of *Pseudomonas aeruginosa* with resistance to all other antibiotics tested.<sup>8</sup> The same drug has been used to treat infections caused by multiresistant strains of *Acinetobacter baumannii*.<sup>9</sup> Sulbactam, a drug introduced in the early 1980s, is increasingly being used for the same purpose.<sup>10</sup> As an alternative to third generation cephalosporins and vancomycin, high doses of penicillin are being proposed to treat pneumococcal infections caused by strains with intermediate levels of penicillin resistance (minimum inhibitory concentration 4-8  $\mu\text{g/ml}$ ).<sup>11</sup>

Despite extensive research the pace of development of antibacterial drugs has not kept up with the increase in bacterial resistance. As more and more organisms develop resistance, concern is growing that we may be approaching the end of the antibiotic era. The intensive use and excessive abuse of antibiotics have resulted in the selection of bacteria that are resistant to many and sometimes all antibiotics. For unclear reasons, these multiresistant organisms either retain or regain susceptibility to certain antimicrobials.

Measures to counter the threat of rapidly escalating antimicrobial resistance include surveillance of susceptibility to and consumption of antibiotics, rational use of antibiotics, better compliance with measures to con-