and a defibrillator as well as my medical bag up five flights of stairs in a block of flats, where the lift is invariably out of order or its floor swimming in urine? What do I do with the equipment while visiting patients who do not require it? If I leave it in the car the possibility of its being stolen is high. Have the authors considered the practical implications of their advice?

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Should be properly recognised

EDITOR,—The editorial on emergency care in general practice fails to mention the growing trend for many general practitioners not to provide prehospital emergency care for their patients—for example, emergency coronary care or care in asthma.¹ Other health care professionals, such as those in the ambulance service and midwives, are only too keen to take on this work to enhance their status. It is surely in the best interests of neither our patients nor the medical profession as a whole for us to lose, by default, what is an integral and rewarding part of general practice. The provision of effective emergency care requires proper contractual recognition, reward, training, equipment, and drugs.

We are surprised at the authors' suggestion that general practitioners should not waste time obtaining an electrocardiogram in patients with a suspected acute myocardial infarction and at their failure to mention thrombolysis before admission to hospital. The risk of developing a potential lethal cardiac arrhythmia is greatest immediately after the onset of infarction,² and all patients with a suspected acute myocardial infarction should be monitored electrocardiographically before and during transportation to hospital. It has been shown that the earlier a thrombolytic drug is given the greater the benefit,³ although this is controversial; the British Heart Foundation's latest guidelines recommend that a thrombolytic drug should be given before admission if the likely time from the initial symptoms to thrombolysis being given in hospital is more than 90 minutes.⁴

Perhaps the time has come when all aspects of prehospital emergency care, including the mechanisms for the most effective delivery of that care, need re-evaluation.

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3 GREAT Group. Feasibility, safety, and efficacy of domiciliary thrombolysis by general practitioners: Grampian region early trial. *BMJ* 1992;305:548-53.

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Irish general practitioners learn immediate cardiac care

EDITOR,—We agree with Anthony Avery and Mike Pringle that more courses on emergency care should be provided for established principals in general practice.¹ For the past two years we, in conjunction with the Irish College of General Practitioners, have been providing courses in

immediate cardiac care locally to Irish general practitioners. A local tutor from the college's continuing medical education faculty organises the administrative details (venue, facilities, catering, etc), and we provide the tutors and teaching equipment. The content of the courses is based on the recommendations of the American Heart Association² but is limited to prehospital concepts (for example, lignocaine is the only antiarrhythmic drug reviewed). A good ratio of tutors to participants—usually 1:4—is an essential part of the skills training in the course. The skills stations teach cardiopulmonary resuscitation, management of the airway, management of arrhythmias, and management of the cervical spine in cases of trauma. Finally, each participant, in conjunction with local ambulance staff, puts all these skills together during a simulated arrest.

To date, 235 practitioners—almost one eighth of all principals in general practice in the Republic of Ireland—have participated. Four fifths of participants have completed feedback forms; all described the course 'as useful or very useful'. The small group format, skills based components, and opportunity to practise with local ambulance crews have been especially appreciated. The original core group of three tutors has now expanded to 15. Most are principals in general practice, but a nursing tutor and ambulance service tutor also participate. All are trained in advanced cardiac life support to the American Heart Association's standard. Owing to the popularity of the course a similar course in immediate trauma care is now also being provided.

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2 American Heart Association. *Advanced cardiac life support: instructor's manual*. Dallas: AHA, 1994.

Courses are available

EDITOR,—Anthony Avery and Mike Pringle emphasise the importance of emergency care in general practice.¹ I commend to readers the certificate course in prehospital emergency care run jointly by the Royal College of Surgeons of Edinburgh and the British Association for Immediate Care (BASICS). The first course was held in March 1993. I recently attended one of these three day courses and found it an ideal way of updating and advancing my knowledge and practical skills in emergency care (trauma, medical, paediatric, obstetric); there was the added benefit of meeting the other participants (doctors, paramedics, and nurses). The course ends with a formal assessment. For further details of this course and other more advanced training by BASICS, readers should write to Dr J Scott, BASICS Education, 34A Woollards Lane, Great Shelford, Cambridge CB2 5LZ.

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General practitioners should be trained in cardiopulmonary resuscitation

EDITOR,—Anthony Avery and Mike Pringle's recommendations regarding emergency care in general practice are useful, but we cannot visualise

every general practitioner carrying a defibrillator, as well as all the other items mentioned, while doing his or her home visits.¹

As anaesthetists, we are constantly appalled at the lack of basic resuscitation skills of medical and nursing staff (senior and junior). Management of the airway is something in which everyone seems to fail horribly. If these findings are extended into general practice the management would be even worse as general practitioners see few collapsed patients. We believe that the Royal College of General Practitioners should alter the training programmes for general practice to include at least three months in anaesthetics. This could perhaps be incorporated with three months in acute trauma (orthopaedics). As Avery and Pringle mentioned, regular updates are extremely important in maintaining skills.

Recently we wrote to all our local general practitioners about the availability of training in cardiopulmonary resuscitation in our hospital. We extended this invitation to their nurses and receptionists. Nine months later the only response has been one telephone call. We believe that local tutors in general practice should encourage their fellow doctors constantly to improve the quality of service they provide to the local population; as well as cervical smear tests and well women clinics, constant updates in cardiopulmonary resuscitation should be essential.

This in no way is meant as a criticism of general practitioners, but in the present medicolegal climate we should all attempt to improve the care we provide to our patients.

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Antibiotics carried in general practitioners' emergency bags

Having a central supplier would increase carriage of drugs

EDITOR,—As part of a course for a diploma in therapeutics I carried out a survey of the drugs carried by general practitioners in 1994. I sent a questionnaire to all 304 course members, who were general practitioners in the areas covered by North Tyneside and Northumberland Family Health Services Authorities, asking about drugs and equipment carried; 193 questionnaires were completed in respect of antibiotics.

Interesting differences are evident between my findings and those of M J Colbridge and colleagues¹ and Ong and Dunbar² (table). Over the past six years carriage of ampicillin has fallen dramatically and that of co-trimoxazole and tetracycline less so. Carriage of amoxycillin and co-amoxiclav and of trimethoprim has risen. Carriage of benzylpenicillin has increased to 95%.

Just before Ong and Dunbar's survey in 1988 the chief medical officer advised all doctors to give parenteral benzylpenicillin before admitting to hospital any patient suspected of having meningococcal infection.³ To encourage doctors to carry benzylpenicillin general practitioners in the areas covered by North Tyneside, Northumberland, and Newcastle Family Health Services Authorities were supplied with free phials of benzylpenicillin. The availability of a free supply of samples and single dose sachets of many antibiotics is likely to be a potent factor in the selection of antibiotics for the emergency bag. In the late 1980s Beecham offered a monthly postal service, supplying sachets of ampicillin, and Wellcome similarly offered free

	Ong and Dunbar ² 1988 North west England (n=115)	Colbridge and colleagues ¹ 1992		Menzies	
		Overall (n=2638)	North west England (n=1424)	1992 North east England (n=1214)	1994 North east England (n=188)
Ampicillin	73 (63.5)	423 (16.0)	229 (16.1)	194 (16.0)	0
Amoxycillin	34 (29.6)	2274 (86.2)	1190 (83.6)	1084 (89.3)	172 (91.5)
Co-amoxiclav	6 (5.2)	434 (16.5)	232 (16.3)	202 (16.6)	94 (50.0)
Co-trimoxazole	79 (68.7)	1329 (50.4)	726 (51.0)	603 (49.7)	71 (37.8)
Erythromycin	112 (97.4)	2284 (86.6)	1231 (86.4)	1053 (86.7)	151 (80.3)
Tetracycline	34 (29.6)	343 (13.0)	159 (11.2)	184 (15.2)	25 (13.3)
Trimethoprim	24 (20.9)	1024 (38.8)	521 (36.6)	503 (41.4)	85 (45.2)
Cephalosporins	63 (54.8)	Data not aggregated in these surveys			35 (18.6)
Metronidazole	18 (15.7)	409 (15.5)	228 (16.0)	181 (14.9)	1 (0.5)
Chloramphenicol:					
Oral	12 (10.4)				
Topical	3 (2.6)	304 (11.5)	169 (11.9)	135 (11.1)	30 (16.0)
Benzylpenicillin	52 (45.2)	2249 (85.3)	1140 (80.1)	1109 (91.4)	179 (95.2)

co-trimoxazole. After about two years Bencard offered amoxycillin, and a little later Beecham, having stopped supplying ampicillin, offered free sachets of co-amoxiclav. Throughout this time Abbott supplied sachets of erythromycin. The table reflects this.

If it was ever thought desirable that doctors should have a standard pack of emergency drugs, provision by a central supplier—for example, at family health services authority level—would be effective. While a free supply of drugs would probably have the greatest impact on increasing the number of doctors carrying those drugs, many doctors would probably be prepared to purchase such an emergency pack, say every six to 12 months, in the knowledge that they were getting up to date material. As the *British National Formulary* is widely distributed, regularly updated, and recognised as an authoritative text perhaps it could contain a section giving guidance on drugs (not just antibiotics) suitable for general practitioners' emergency bags.

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May not be used when required

EDITOR.—It is reassuring to learn that the proportion of general practitioners carrying benzylpenicillin increased to 85.3% in the north of England.¹ One reason that might account for this is the practice of family health services authorities or health authorities, or both, of distributing phials of benzylpenicillin to local general practitioners. As part of a local survey we sent a questionnaire to all health authorities in Britain asking if they had distributed benzylpenicillin. Twenty one of 120 that replied had done so (response rate 89%). Interestingly, eight of these authorities are in the area covered by the survey. Five of the eight had distributed benzylpenicillin to local general practitioners in the period covered by M J Colbridge and colleagues' survey.

Altogether 372 out of 532 general practitioners in Birmingham replied to our survey (response rate 70%). Of these, 353 said that they carried benzylpenicillin. Most of them (335) remembered having received the phials distributed by Birmingham Family Health Services Authority in 1993.

Colbridge and colleagues did not ask whether parenteral chloramphenicol was carried in on call bags as an alternative to benzylpenicillin for allergic patients. Only 25 general practitioners in

Birmingham carried the drug. Many of the rest (206) said that they would not use the drug in primary care.

The authors refer to the crux of the matter at the end of their paper. Just because a general practitioner carries a drug does not mean that he or she will use it. Less than half of the Birmingham residents known to have had meningitis or meningococcal disease in 1993 received benzylpenicillin before admission. Meningococcal disease can be extremely difficult to diagnose in primary care. Even so, every opportunity should be taken to encourage the use of parenteral antibiotics by general practitioners.

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Penicillin is necessary for suspected meningococcal disease

EDITOR.—M J Colbridge and colleagues report an encouraging increase in the number of general practitioners in the north east and north west of England who carry benzylpenicillin in their emergency bags.¹ An increase in the use of penicillin before admission in suspected cases of meningococcal disease, to reduce mortality, is the desired outcome of campaigns to raise awareness such as that undertaken in the north east in October 1991.^{2,4}

The nature of the campaign varied among districts, with some districts providing general practitioners with benzylpenicillin in addition to written information and advice. In County Durham benzylpenicillin was sent only to general practitioners in Darlington district. In September 1993 a preadmission penicillin treatment pack was sent to all general practitioners and the deputising services operating in County Durham. The pack was a purpose designed red plastic box containing benzylpenicillin, chloramphenicol, and water for injection and an instruction card, and it had sufficient space for the storage of syringes and needles. Arrangements were made for used or

expired phials of the antibiotics to be replaced by the hospital pharmacies.

Data that we retrieved from hospitals' and general practitioners' case notes (table) and those reported by Strang and Pugh⁴ suggest that, although more general practitioners are carrying penicillin in their emergency bags, possibly as a result of campaigns to raise awareness, not all patients suspected of having meningococcal disease are receiving penicillin before admission. Consultants in communicable disease control should repeatedly remind general practitioners about the signs and symptoms of meningococcal disease and the importance of giving penicillin—or chloramphenicol in cases of known allergy to penicillin—before admission.

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- 3 Cartwright K, Reilly S, White D, Stuart J. Early treatment with parenteral penicillin in meningococcal disease. *BMJ* 1992;305:143-7.
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Follow up by telephone

Genitourinary medicine clinic gives results by telephone

EDITOR.—Jammi Nagaraj Rao discusses using the telephone to follow up patients.¹ Genitourinary medicine clinics provide open access. So that we can provide the necessary appointments for patients with problems suggesting a sexually transmitted disease within an acceptable time limit,² giving patients the results of laboratory tests by telephone is an essential part of the service.

In our clinic from September to November 1994 there were 1385 telephone follow up calls, which accounted for 13.2% (1385/10528) of "attendances." Doctors select patients who are unlikely to have an infection, do not require further tests, and can understand English to make a telephone appointment for a specific day to get their results. A list is generated so that case notes and results are available the day before the patient is expected to ring. Patients telephone on their allotted day and are asked to quote their clinic number and date of birth. To safeguard confidentiality, results are not given to any other person unless permission from the patient is recorded in the notes.

This service requires resources. The telephone system must have enough lines designated for giving results and should allow calls to be diverted easily to other members of staff. Receptionists are required for the administrative tasks, and trained staff must be available at all times when patients telephone for their results. Nurses are nominated to deal with telephone follow up and may spend considerable time explaining results and updating notes. Therefore telephone appointments must be

Use of penicillin before admission in cases of meningococcal disease in County Durham, 1990-4

District and time period	Patients with meningococcal disease	Seen by doctor before admission	Diagnosis suspected before admission by a doctor	Penicillin or chloramphenicol given before admission	Deaths
North Durham:					
Oct 1990-Sept 1992	28	16	6	1	3
Oct 1993-Mar 1994	11	8	4	1	0
North and south Durham:					
Oct 1993-Mar 1994	26	18	9	4	1