CORRESPONDENCE

Child health and computer confidentiality P M Dunn, MD, and C H M Walker, FRCPED 276	Thrombocytopenia and subclavian cannulation S C Morrison, MRCP, and P Jacobs, FCP(SA) 279	Urinary incontinence during treatment with depot phenothiazines I I Dainow, MB..... 282
Getting the NHS back on course D F Jones..... 276	Spurious polycythaemia resolving during observation B W S Robinson, MRCP, and D Corless, MRCP 280	Who decides? Patterns of authority S S Bakhshi, MFCM..... 282
"Innovation in the Pharmaceutical Industry" W K S Moore, MB..... 277	Comparison of the tine and Mantoux tuberculin tests V M Hawthorne, FRCPGLAS..... 280	Negotiating rights for junior hospital doctors T McFarlane, MRCOG..... 282
Cephalosporin activity S Selwyn, MD; R W Lacey, MD..... 277	Schizophrenic neurasthenic defect G J Lodge, MRCPsych..... 280	"Proceed with the pricing" A F Rushforth, FRCS..... 282
Antibiotic resistance in Haemophilus influenzae A P Gillett, MRCP, and others..... 278	Patients' responses to barium x-ray studies D A Haslam, MRCP; Jenifer Wilson-Barnett, PHD..... 281	New consultant contract D G Calvert, FRCS; P J Hirsch, MRCOG.... 282
Hypertension and oral contraceptives F B Pipkin, DPHIL, and others..... 278	Economising on drugs I R Wallace, MRCP; C A West, MB..... 281	Ballot of consultants and registrars R Hopkins, FDSRCS..... 283
Children who cannot read J F Soothill, FRCP..... 278	Surgical approaches and drug treatment in the carcinoid syndrome P W L Siklos, MRCP..... 281	You don't get what you don't ask for W F Whimster, MRCP..... 283
Contamination of sterile fluids I W Marshall, MPS..... 279	Replacement therapy in Turner's syndrome C G D Brook, MD..... 281	Money for old rope M S T A Lawrence, MRCP..... 283
Hazard of chemical sympathectomy J M B Burn, FFARCS, and L Langdon, FFARCS 279		Category II fees for consultants M Goldman, DMRD..... 283
		Points from letters Burn hazard with cement (E S Seager); Epidemic myalgic encephalomyelitis (W H Lyle)..... 283

Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters must be signed personally by all their authors.

Child health and computer confidentiality

SIR,—In recent months there has been an increasing controversy in the news media and medical press over plans to standardise and improve methods of collecting, analysing, and communicating information concerning the health of the preschool child. Sadly, a great deal of the comment has been ill-informed and emotive. Thus a recent editorial in *World Medicine* (14 June) commented: "Full marks to the BMA's Central Ethical Committee for condemning the DHSS plans to computerise children's records. Key words like 'computer' act as alarm signals...." The implication is that the bureaucrats are conspiring to breach professional standards of confidentiality. In fact nothing could be farther from the truth. The Child Health Computing Committee (CHCC) that is responsible for advising on the design of the data collection system is a multidisciplinary body with representatives from all the health professions concerned. Included on the committee are no fewer than 19 doctors and seven midwives, nurses, and health visitors. We represent the British Paediatric Association, although we write in a personal capacity.

From the outset there has been unanimous agreement on the committee on the need to ensure a high standard of confidentiality towards the collected information, and indeed more time has been given to this aspect than to any other. It has been accepted that identifiable information should be held for the specific purpose of the continuing care of the patient and should not be used for any other purpose without appropriate authorisation or the consent of the parent or guardian. Access to identifiable information held in medical

records is to be confined to the author and to the person clinically responsible for the patient during the episode for which the data have been collected unless specifically authorised by the clinician in the interest of the patient. Furthermore, an individual is not to be identifiable from data supplied for statistical purposes except when follow-up of the individual patient is a necessary part of the research and either informed prior consent has been given or consent has been obtained from the chairman of an appropriate ethical committee.¹

The overwhelming majority of members of the CHCC believe that the system that has been devised is likely to be superior to current methods of data collection with respect to confidentiality. It is true that some general practitioners and the Central Ethical Committee of the BMA have expressed strong reservations. Undoubtedly some GPs do not feel it proper to share information about their patients with other members of the health care team, while others do not wish such information to be held by anyone outside their own practices. This viewpoint is understandable if the GP is prepared to and does undertake all the manifold responsibilities that contribute to a modern comprehensive child health service. However, for a variety of reasons, many do not wish or find themselves unable to undertake aspects such as immunisation, developmental screening, handicap assessment, and the school medical service; in which case it is essential that the information necessary to provide proper care, including the prevention of disability, should be readily available to those who undertake these duties.

Computers have been used to help provide a more effective and efficient medical service in most developed countries for many years. Particular use has been made of them in the past to collect and analyse maternity and neonatal data and to improve the uptake of immunisation (see also "Computers as allies" by Dr Ken Deas in *Pulse*, 20 May 1978). To suggest now that we should neglect to use such an invaluable tool would be extraordinary and somewhat reminiscent of King Canute's attempt to hold back the tide. The CHCC is merely trying to standardise and improve (including confidentiality) on the many similar computer-assisted data collection systems already in use in Britain.

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¹ Hansard, House of Commons, 26 May 1978, col 808.

Getting the NHS back on course

SIR,—Your leading article (1 July, p 1) succinctly summarised the conclusions of Sir Francis Avery Jones (p 5) and Professor Rudolf Klein (p 73) about the present problems of the Health Service. The answer can be condensed into one word, a word that was on everyone's lips four years ago but is now scarcely whispered—devolution.

Regional administrators, new to their jobs in the brave new world of 1973-4, were spreading the gospel, "Region shall not do what can be done better at area and area shall not do what can be done better at district." In fact, as many now acknowledge (if only privately), most things are done better at

district level. But the reality is that regions and areas have expanded and many services are being centralised. It is interesting to note the stern admonition in the conclusions of the Salmon working party set up to conceive a Health Services Supply Board that on no account should independent supplies organisations be continued (or even countenanced) at district level. One wonders why the users cannot be trusted to spend their money wisely. But this is indicative of the trend in the service today.

Greater centralisation and bureaucracy go hand in hand with greater frustration and demoralisation among the front-line troops. The essential role of the administrator as a professional co-ordinator becomes more vital than ever, but the increasing number of functional managers responsible to area and regional counterparts makes his task increasingly impossible. There is need for a complete review of the roles of the many tiers. Government has an overall responsibility to Parliament for the performance of the service and must lay down the central guidelines and resource constraints. It should keep out of day-to-day management and leave priorities to the people providing health care.

Region should concentrate on strategic planning and resource allocation. They need a highly talented staff to do this—but not a large one. Area teams of officers should concentrate on keeping their members well informed; they should resist the temptation to build up empires at area level which are also duplicated at district level (works, finance, supplies, personnel, etc). There is little need for senior doctors, dentists, nurses, and other professional staff to be employed at area level. District staff can just as well provide advice to area health authorities and they will at least have the advantage of being nearer the patient and much nearer to those who actually provide health care. A great deal of manpower would then be released for redeployment where it is needed most at unit and district level.

The service is said to have too much management. A more accurate assessment would be that management resources are imperfectly deployed among the upper tiers of the service to the detriment of the bottom rungs. And there is a crying need for more consultation between the upper tiers (Department of Health and Social Security and region) with the district and local tiers. The present arrangements whereby regional teams of officers talk to the Department after consulting with area teams of officers (but ignoring district management teams) just will not do any more.

The philosophy of reorganisation was that of grass roots planning and management springing from district level. If everyone would now co-operate in achieving this aim many of the troubles of the service would be dispelled.

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"Innovation in the Pharmaceutical Industry"

SIR,—Dr B W Cromie (17 June, p 1618) discusses many of the legislative and regulatory measures to promote safety which appear to discourage innovative pharmaceutical re-

search. It should be remembered that these disincentives do not end with the manifold restraints in the interest of safety applied to new drugs.

Under the Health and Safety at Work Act 1974 any substances produced during a manufacturing process must be tested to ensure that no risk occurs to plant operators. Such tests apply to long- as well as short-term risks due to intermediate products in multi-stage processes used very frequently in drug manufacture. Thus safety testing could easily delay or even halt production of a new drug, proved to be safe in itself, because an intermediate product of the manufacturing process requires extensive tests to determine its toxicological properties and safe methods of handling.

Thus one man's safety may frustrate another man's need, and this equation applies with considerable force in pharmaceutical research and manufacture. If safety criteria are given absolute priority then new drugs will be few and far between, while the resources of people and money will correspondingly be hard to find. Is this what the profession and the public really want?

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Cephalosporin activity

SIR,—Dr R Wise (1 July, p 40) is to be congratulated on his concise yet highly informative survey of the confusing cephalosporin group. However, statements on the relative activities of these antibiotics should be made—and accepted—with extreme caution when they are based on conventional in-vitro tests. These ignore a number of important factors that operate in vivo. Thus the inclusion of a physiological concentration of 4% human serum albumin in the test media at once increases the realism of the system. The inhibitory activities of cephalazolin, cephalothin and cefamandole are then found to be reduced by factors varying, respectively, from 8 to 53, 6 to 23, and 6 to 28, according to the test organism; moreover, bactericidal activities are even further reduced.¹ In contrast there is a much smaller fall in the potency of those cephalosporins which possess lower activity on routine testing.

Similarly, preincubation of cultures for two hours before adding the test antibiotic enables the bacteria to begin active growth and, under suitable conditions, to form β -lactamases² and other microbial products that are present in an established infection. The antibacterial activity observed under these more rigorous conditions again places antibiotics such as cephalazolin and cefamandole in a poor light, mainly owing to their vulnerability to β -lactamases, while the drugs stated by Dr Wise to have low activity perform well. The combined result of these two important effects can be readily calculated from the mean of the sum of the "serum factor" and "preincubation factor."³ This composite value is conveniently expressed as a reciprocal—termed the "residual activity index" in the accompanying table—and is simply the remaining fraction of the in-vitro activity that was originally observed in the conventional test system.

Apart from the antibacterial activity of an antibiotic estimated from realistic in-vitro

Major indices of cephalosporin activity in vivo

Cephalosporin	Residual activity index	Serum peak*	Apparent volume of distribution†
Cephaloridine	0.16	52	16
Cephalothin	0.11	18	<17
Cephalexin	0.37	(36)‡	16
Cephadrine	0.45	74	23
Cephazolin	0.06	38	10
Cefoxitin	0.26	23	8
Cefuroxime	0.37	(36)	12
Cefamandole	0.10	26	12

*Free drug (mg/l) after 1 g intravenously (data for cephalexin available only after 500 mg and for cefuroxime only after 750 mg).

†1.73 m²; cephalothin value unreliable owing to metabolism.

‡Administered only orally in UK and USA.

tests, the drug's efficacy is, of course, dependent largely on its pharmacokinetic properties. An antibacterial effect can be exerted in vivo only by that fraction of an antibiotic which is not bound to the body proteins, and the all-important tissue concentration of unbound drug is determined by the peak concentration of free drug in the patient's serum.³ These peak levels are shown in the table, together with the "apparent volume of distribution" of each cephalosporin.^{4,5} The latter value provides a useful and readily measured index of the drug's availability at the tissue site of infection if errors due to metabolic and other non-renal losses are avoided.

The fascination of cephalosporins for medical microbiologists, pharmacologists, and prescribing doctors alike lies in the remarkable diversity of characteristics possessed by these closely related drugs. Their detailed study should provide answers to many unresolved questions on the distribution and ultimate activity of drugs in general.

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¹ Bakhtiar, M, and Selwyn, S, in *Current Chemotherapy*, ed W Siegenthaler and R Lüthy, p 519. Washington, DC, American Society for Microbiology, 1978.

² Lacey, R W, and Stokes, A, *Journal of Clinical Pathology*, 1977, **30**, 35.

³ Craig, W A, and Welling, P G, *Clinical Pharmacokinetics*, 1977, **2**, 252.

⁴ Barza, M, and Miao, P V W, *American Journal of Hospital Pharmacy*, 1977, **34**, 621.

⁵ Gower, P E, and Dash, C H, *European Journal of Clinical Pharmacology*, 1977, **12**, 221.

SIR,—In his assessment of cephalosporin antibiotics (1 July, p 40) Dr Richard Wise presents an array of laboratory information, mostly unsupported, and then interprets his particular in-vitro approach into recommendations for clinical use. Many workers involved in the evaluation of these antibiotics will disagree with the following statements:

(1) Dr Wise implies that cefoxitin, cephradine, cefaclor, and cephalexin do not have good activity against *Staphylococcus aureus*. I assume "activity" refers to minimum inhibitory concentrations in vitro; if so, these cephalosporins have activity equivalent to or better than methicillin,¹ an antibiotic for several years considered to be responsible for controlling staphylococcal sepsis.

(2) Faecal streptococci are not resistant to all the cephalosporins; urinary levels of several cephalosporins must surely often be adequate for effect.

(3) Readers will be completely confused in deciding the optimum cephalosporin for *Haemophilus influenzae*. Thus Dr Wise first states that "the most dependable and active cephalosporin against *H. influenzae* is cefuroxime" and later that "[cefamandole] is the most active available cephalosporin against *H. influenzae*."

(4) The statement that there appears to be a