R P D Cooke and colleagues offer further supportive evidence for the adequacy of single doses of gentamicin in febrile neutropenic patients. Their approach of halving the dose if the trough concentration of gentamicin is 1-2 mg/l may be overcautious, since serum concentrations of aminoglycosides have not been shown to have much predictive value for efficacy or toxicity.⁵

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Exposure to aminoglycosides should be monitored during treatment

EDITOR,—In her commentary on Michael Barza and colleagues' meta-analysis of whether aminoglycosides should be given in single or multiple daily doses, Fiona Smaill advocates once daily dosing.¹ We agree with her but believe that her recommendation not to monitor aminoglycoside concentrations routinely is ill conceived. Opinion on this matter will depend on underlying beliefs and assumptions. If you currently do not believe in monitoring during multiple daily dosing (an unusual stance) then it may be reasonable not to monitor during once daily dosing. If, however, you believe—as we do²—that aminoglycoside toxicity is related to total exposure to aminoglycosides then monitoring in some form seems as necessary with once daily dosing as with multiple daily dosing. Only the mode of monitoring needs to be considered.

The authors of the meta-analysis suggest that there is less need to monitor peak concentrations during once daily dosing.¹ We agree that, because peak concentrations during once daily dosing will always be higher than those during multiple daily dosing with the same total daily dose, there is perhaps less need to monitor peaks from the standpoint of efficacy. We think, however, that some index of exposure to aminoglycosides should be monitored to avoid excessive dosing. We have seen nephrotoxicity and ototoxicity occur when patients were not monitored in the early period. In our institution we estimate the area under the curve from a peak concentration and a mid-dose concentration (6-14 hours after dosing) to indicate exposure.³

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Twin methodology is not always easily understood

EDITOR,—Nick P Thompson and colleagues' report of their twin study looking at the effects of genetics versus the environment in inflammatory bowel disease would have benefited from being reviewed by someone doing research into twins and being revised according to his or her suggestions.¹ The authors obviously cannot do anything about the bias due to ascertainment, since no population based British twin registry exists. They discuss this appropriately. Other mistakes in the paper, though, could have been corrected easily.

For example, the authors state that their table shows concordance rates, whereas in fact it shows only the crude numbers of pairs, not the rates. Furthermore, when mentioning concordance rates the authors do not make clear which of the possible concordance rates they are talking about. In twin research we are usually dealing with at least two concordance rates. The pairwise rate is the proportion of concordant pairs and is used for the comparison between monozygotic and dizygotic twin pairs. This will answer the question: Is the disease inherited at all? The probandwise rate is the proportion of affected cotwins of probands and is comparable to the risk of recurrence in other relatives. This answers the question: Given that I have an affected cotwin, what is my own risk of being affected? In twin research it is usually the pairwise concordance rates that are used to compare monozygotic and dizygotic twins, while estimates of the relative risk or odds ratio are used in twin-control studies.

It is a pity that the authors stopped after concluding that the monozygotic twin pairs were more likely to be concordant. It would have been interesting if they had tried to estimate heritability and the risk of recurrence (that is, probandwise concordance rates).

As a twin researcher myself and supervisor of several projects on various diseases in twins, I know that twin methodology is not always easily understood. All the Scandinavian countries have population based twin registries with researchers experienced in both the somatic and psychiatric aspects of twinship. In both England and the United States there are also twin researchers with experience in psychiatry, psychology, and diseases such as diabetes and rheumatoid arthritis. All could have helped to improve this paper.

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Project has been set up to explore ways of preventing wastage of doctors

EDITOR,—The Medical Careers Research Group has reported the severe wastage of doctors from the NHS.¹ The best estimate of 16% for doctors not working in medicine in Britain, plus the 4.6% of doctors working only outside the NHS, gives a total of one in five doctors lost to the NHS at any time.

In addition, the rate of drop out of medical students was increased in 1994, at 15%.² This means that the effective output for the NHS is about a third less than the intake of British medical schools. At the same time, staffing difficulties are apparent in many specialties.

The North Western region's "Don't waste doctors" project has been set up to explore solutions to these problems. Research shows that half of women doctors want part time work at some point in their career and that the proportion of male doctors interested in part time work is increasing.³ Currently, part time training posts can be difficult to secure owing to budgetary limitations and the interpretation of "well founded individual reasons" (for wanting part time work) as meaning "has a young baby." This excludes many doctors who need flexible training. The "Don't waste doctors" project proposes the radical idea that part time training posts can be an integral part of a trust's posts; they provide reasonable hours for doctors needing part time work, lead to the retention of skilled doctors in their preferred specialty, and improve teams' continuity by resulting in longer serving junior doctors.

In the project we are assessing the needs of doctors in the north west who are not working for the NHS and we are researching what would bring them back. We have already found a number of doctors interested in returning to medicine. Through liaison with the postgraduate department a retraining scheme is being developed, and local trusts will be encouraged to advertise more flexible timetables for training posts in specialties with staffing difficulties. It would be interesting to know how many of the women working part time in the Medical Careers Research Group's study chose their specialty for positive reasons and how many chose it for the negative reason that it was the only one in which less arduous hours were available.

The problem of wastage must be addressed for the sake of the doctors now working in an understaffed NHS, for doctors who believe that they can no longer work in medicine, and for patients. Increasingly, the quality of doctors is under scrutiny from the public, who want less stressed doctors working in their chosen area of interest.

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ABC of Urology

Comments on managing urinary tract infection in children were inadequate

EDITOR,—We were disappointed by the section on managing urinary tract infection in children in Chris Dawson and Hugh Whitfield's ABC of Urology.¹ There is widespread agreement on most aspects of the diagnosis, investigation, and treatment of such infection in childhood; these were missing from this article. The current consensus was summarised by a Royal College of

Physicians working group, whose members included paediatricians, paediatric nephrologists, radiologists, microbiologists, general practitioners, paediatric urologists, and a parent.²

The article makes no reference to the vital importance of the child's age to management, despite clear evidence that younger children are at far greater risk of developing renal scars with a urinary tract infection, infants under 1 year being especially vulnerable. This explains the importance placed by the working group on urgently and accurately diagnosing urinary tract infection in very young children, who may present with a wide variety of non-specific symptoms. Together with evidence on the changing reliability of different imaging modalities at different ages, the age-vulnerability concept also underpins the agreed imaging protocols.

Dawson and Whitfield's article suggests that ultrasound scanning and intravenous urography are of equal value, indicates no age qualifications for cystourethrography, and does not even mention dimercaptosuccinic acid isotope scanning, the investigation universally recognised as the best for showing scars in small children.³ The working group's guidelines recommend that all children aged under 1 year with a urinary tract infection should have ultrasonography of the renal tract, micturating cystourethrography, and delayed dimercaptosuccinic acid scanning. At 1-7 years, ultrasonography and dimercaptosuccinic acid scanning are recommended, with intravenous urography being considered only if radioisotope imaging facilities are not available. Micturating cystography is appropriate only if the initial investigations show abnormalities, the clinical history suggests acute pyelonephritis and there is a family history of vesicoureteric reflux, or the child has recurrent infections. After the 7th birthday there is less consensus but general agreement that all children should undergo some form of imaging and that few need micturating cystography.

Dawson and Whitfield mention the use of sterile adhesive bags to collect urine from young children and the occasional need for suprapubic aspiration, but they fail to mention urine collection pads.⁴ These are a reliable method of collecting urine that minimises contamination and is simple for parents to use. They are cheap (pad and syringe cost 9p) and available through NHS supplies. Since their introduction the use of adhesive bags has fallen by over a third in the Northern region, with savings of many thousands of pounds.

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Article on prostate cancer should have adhered to agreed staging terminology

EDITOR,—We are concerned by the article on prostate cancer in the ABC of Urology, in which Chris Dawson and Hugh Whitfield mention a system of staging of prostate cancer that they say is the TNM system.¹ The staging system given in

the article is at odds with the TNM staging system for prostate cancer adopted by the International Union Against Cancer in 1992.² This official TNM system is used worldwide—even in North America, where historically there have been competing staging systems. It also has the official sanction of the British Association of Urological Surgeons.³

Our main criticism of the staging mentioned by Dawson and Whitfield is that it assigns stage T4 to disseminated disease. The TNM system clearly stages dissemination into lymph nodes or skeleton under the N and M categories. The article includes a diagram said to show T3 disease; this would show T4 disease (with bladder neck invasion) under the TNM classification.

Are our criticisms pertinent? Possibly the authors are using "stage grouping,"² although they do not say so. If so, use of the T prefix is not appropriate and stage grouping is not widely used or endorsed.³

In day to day practice, urologists, general practitioners, pathologists, oncologists, and radiologists communicate and collaborate in the management of prostate cancer by using the TNM system of staging as officially proposed by the International Union Against Cancer. These specialists and the many other groups that read the *BMJ* would be helped by close adherence to agreed staging terminology.

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Recommended treatment of paediatric tumours is misleading

EDITOR,—We were surprised at some of the content of Chris Dawson and Hugh Whitfield's article on common paediatric problems in their ABC of Urology.¹ The section on tumours contains misleading information, which may have been current in the 1960s but has now been superseded.

Intravenous urography is now rarely used in cases of Wilms's tumour; the diagnosis and preoperative staging are made with high resolution ultrasonography, computed tomography, and magnetic resonance imaging.

The article implies that operation is the only treatment for renal carcinoma. Chemosensitivity may be seen in some cases, and postoperative irradiation for microscopic residual disease should not be excluded.

Our main concern is the suggestion in the article that radical surgery is the primary treatment for pelvic rhabdomyosarcoma. This is contrary to current practice. Chemotherapy is an absolute requirement for all children with rhabdomyosarcoma, regardless of site and stage. Children with tumours that cannot be completely resected with minimal morbidity should receive chemotherapy before definitive surgery. This policy usually leads to limb and organ salvage, even in bladder tumours, not all of which need cystectomy—and certainly not as primary treatment.

Chemotherapy is not a recent strategy but has been pivotal in the treatment of such tumours for many years. These diseases are rare, and it is therefore most important that the children are

treated in centres with special skill and experience. Most areas of Britain are close to a team of paediatric oncologists, who work together with appropriately trained paediatric surgeons—all members of the United Kingdom Children's Cancer Study Group. If progress is to be maintained by use of appropriate primary or adjuvant chemotherapy and, if inappropriate, sometimes mutilating, surgery is to be avoided, then these children should be referred at presentation to such centres.

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Radical pelvic surgery has no role in primary management of vesical or prostatic rhabdomyosarcoma

EDITOR,—Chris Dawson and Hugh Whitfield's article on common paediatric problems in urology fails adequately to reflect advances in the management of rhabdomyosarcomas of the urinary tract in childhood and may result in inappropriate management of children with this difficult malignancy.¹ The role of surgery in the management of this tumour has evolved over the past 30 years in an attempt to balance long term survival with morbidity secondary to urinary tract surgery and radiotherapy.²

Before 1960 the treatment of rhabdomyosarcoma of the urinary tract consisted of radical surgery and radiotherapy alone or in combination; there were few long term survivors. By the late 1970s wide surgical excision had been shown to be curative in 73% of localised tumours, but the prognosis for advanced disease remained poor.² Pelvic rhabdomyosarcomas were among the first localised sarcomas to be treated by primary chemotherapy in an attempt to maintain continuity of the urinary tract. Protocols I-III of the international rhabdomyosarcoma study have assessed the role of chemotherapy and surgery in the management of rhabdomyosarcoma of the urinary tract, with protocol III recently showing that primary chemotherapy in non-metastatic tumours permits preservation of the bladder in 60% without compromising long term survival rates of about approximately 75%.^{2,3}

On the basis of the results of protocols I-III,^{2,3} and in contrast to the view expressed by Dawson and Whitfield, paediatric surgeons and oncologists believe that radical pelvic surgery has no role in the primary management of vesical or prostatic rhabdomyosarcoma, although it offers the prospect of cure in children who do not have disseminated disease but fail to respond to chemotherapy or develop a pelvic relapse. Limited excisional surgery retains a role in the primary management of tumours confined to the anterior wall or dome of the bladder.⁴

The role of bladder preserving surgery in prostatic rhabdomyosarcoma (that is, radical prostatectomy) remains unclear because of the small numbers of children who have been managed this way; such surgery is currently reserved as an alternative to anterior pelvic exenteration when the primary tumour has failed to respond to prolonged chemotherapy or has relapsed locally.³

Dawson and Whitfield should have said that the combination of chemotherapy, radiotherapy,