

(8) Night sitting: nurse auxiliary: 10 hours per night for three weeks, including allowance for overheads	1150
(9) Hospice at home: three weeks round the clock (staff nurse), including allowance for overheads	3630
(10) Equipment:	
Mattresses/urinals, etc	140
Incontinence equipment/pads	25
On loan equipment—for example, wheelchairs	30
(11) Four visits by occupational therapist, including travel	35
(12) Two visits by senior clinical psychologist, including travel	35
Total cost of package	21 855
In addition, cost of zidovudine	5200

Thus the cost of the total package of care for one year for a patient not receiving zidovudine, excluding blood transfusion and associated costs, is £20 805, and the cost of the total package of care for a patient receiving zidovudine is £27 055.

Previous estimates of the cost of caring for patients with AIDS in the United Kingdom have concentrated largely on hospital treatment¹, and have produced a much lower average lifetime cost. These estimates suggest that shifting the balance of care from hospital to the community will nevertheless be expensive and that as an increasing proportion of patients with the AIDS related complex or AIDS are prescribed zidovudine these expected lifetime costs may rise even further.

DEIRDRE CUNNINGHAM
S F GRIFFITHS

St Mary's Hospital,
London W2 1NY

1 Johnson AM, Adler MW, Crown JM. Acquired immune deficiency syndrome and epidemic of infection with human immunodeficiency virus; costs of care and prevention in an inner London district. *Br Med J* 1986;293:489-92.

Impotence: treatment by autoinjection of vasoactive drugs

SIR,—The account by Mr Gordon Williams and colleagues (5 September, p 595) of their extensive experience with self injection treatment for erectile impotence made impressive reading. We too have established a successful self injection programme at our hospital, which includes well over 100 patients, the maximum follow up period being 18 months. While we do not wish to detract from the main message of the paper by Mr Williams and coworkers, we would like to make certain points.

We do not believe that the addition of phentolamine confers any particular advantage over the use of papaverine alone, for either diagnostic or therapeutic purposes. The combined use of these two drugs was popularised by Zorngiotti and Lefleur,¹ but there is no scientific evidence to justify this practice. In our experience patients respond just as well to papaverine alone, and the addition of phentolamine in those who do not seem to improve their response. Though the pharmacological basis on which these two drugs act is different—that is, papaverine is a non-specific smooth muscle relaxant, whereas phentolamine is a non-selective α adrenoceptor blocker—they both essentially cause cavernosal smooth muscle relaxation. The in vitro profile of response to α adrenoceptor agonists suggests that α_1 adrenoceptors predominate in the cavernosal trabecular smooth muscle, as opposed to the cavernosal arterial smooth muscle, which exhibits a concentration of α_2 adrenoceptors.¹ The non-selective

α adrenoceptor blocking action of phentolamine is therefore unlikely to contribute any more smooth muscle relaxant effect at either of these two sites than that achieved by papaverine alone. In fact, papaverine has been shown to be the more potent of the two, being six to seven times as effective as phentolamine in increasing cavernosal arterial inflow and in reducing cavernosal venous outflow considerably, whereas phentolamine has no demonstrable effect on this aspect of erectile haemodynamics.³

Quite apart from the theoretical arguments, however, the combined use of these agents has economic implications. Our pharmacy says that each single use phial of 30 mg papaverine and 1 mg phentolamine costs the National Health Service around £8 to prepare compared with 60p for a single ampoule of 60 mg papaverine (supplied by Torbay Hospital pharmacy). Spread over a year, and allowing for two injections a week, the respective costs work out at £832 and £32.76. Clearly the combined use of papaverine and phentolamine seems to negate one of the advantages of self injection treatment—namely, its substantially lower cost than the implantation of a semirigid penile prosthesis, which costs about £400 (per pair).

We often need to use up to 60 mg of papaverine in some patients—for example, the elderly and those with moderate degrees of penile arterial insufficiency. Certainly, those with more severe arteriopathy do not respond with an erection that is rigid enough to allow intercourse, even with higher doses of papaverine. In this context, therefore, it is surprising that Mr Williams and colleagues included in their list of impotent patients who were practising self injection diabetic men with a penile brachial index below the critical value of 0.6, which is widely accepted as diagnostic of severe arterial compromise and therefore presumably precludes a satisfactory response to papaverine.⁴

Finally, we do not agree that men with a penile brachial index >0.7 who do not respond satisfactorily to papaverine necessarily have venous leakage. Penile brachial index values in the range 0.6 to 0.9 cannot reliably exclude arteriogenic impotence.⁴ Furthermore, the response to papaverine is often enhanced by appropriate stimulation. We have observed equivocal erectile responses develop into full erections with the help of vibratory stimulation to the glans penis or exposure to erotic videos.

K M DESAI
J C GINGELL

Southmead General Hospital,
Bristol SB10 5NB

- Zorngiotti AW, Lefleur RS. Autoinjection of the corpus cavernosum with a vasoactive drug combination for vasculogenic impotence. *J Urol* 1985;133:39-41.
- Juenemann KP, Lue TF, Fournier GR, Tanagho EA. Haemodynamics of papaverine and phentolamine induced penile erection. *J Urol* 1986;136:158-61.
- Hedlund H, Anderson KE. Comparison of the responses to drugs acting on adrenoceptors and muscarinic receptors in human isolated corpus cavernosum and cavernous artery. *J Auton Pharmacol* 1985;5:81-8.
- Metz P, Bengtsson J. Penile blood pressure. *Scand J Urol Nephrol* 1981;15:161-4.

Fragile X syndrome

SIR,—In his leading article on the fragile X (Martin-Bell) syndrome (5 September, p 564), Dr H G Kinnell's statement that "antenatal diagnosis is not sufficiently reliable to allow routine testing" is misleading. The condition has been successfully diagnosed by cytogenetic analysis of fetal blood and amniotic fluid.¹

At King's College Hospital we have performed cytogenetic studies on blood samples taken by cordocentesis² from 36 cases at risk of fragile X

syndrome and have accurately diagnosed this syndrome in nine male fetuses. Furthermore, in a recent study of placental biopsy specimens, obtained during fetal blood sampling, from 10 fetuses at risk of this condition we showed that first trimester prenatal diagnosis is possible.³ Thus while prenatal diagnosis of fragile X syndrome may currently be regarded as outside the province of the busy diagnostic cytogenetic laboratory, parents should not be denied the possibility of prenatal diagnosis that is available in specialist centres.

MARK J MCKINLEY
KYPROS H NICOLAIDES
LYNDAL U KEARNEY
OONAGH HERON

Department of Obstetrics and Gynaecology,
King's College School of Medicine and Dentistry,
London SE5 8RX

- Turner G, Opitz JM, Brown WT, et al. Conference report: second international workshop on the fragile X and on X linked mental retardation. *Am J Med Genet* 1986;23:30.
- Nicolaides KH, Soothill PW, Rodeck CH, et al. Ultrasound guided sampling of umbilical cord and placental blood to assess fetal wellbeing. *Lancet* 1986;i:1065-7.
- McKinley MJ, Kearney LU, Nicolaides KH, et al. Prenatal diagnosis of fragile X syndrome by placental (chorionic villi) biopsy culture. *Am J Med Genet* (in press).

Mental health of unemployed men in different parts of England and Wales

SIR,—Drs Paul Jackson and Peter Warr (29 August, p 525) state that the scores for mental ill health were significantly lower in areas of particularly high unemployment and that "these results support the hypothesis that communities with high rates of unemployment develop resilience that is beneficial for the mental health of the unemployed."

I would suggest an alternative view: that in areas of low unemployment those not employed are likely to include a large proportion of the least fit, either mentally or physically. In areas of high unemployment greater numbers of mentally fit people are also likely to be unemployed, causing a fall in the percentage of the mentally unfit who are unemployed. Thus the apparently lower rate of mental ill health in areas of high unemployment may be explained in simple statistical terms and has nothing to do with the development of mental resilience.

JOHN RUSSELL

Burgoyne Medical Centre,
Sheffield S6 3QB

AUTHOR'S REPLY,—The risk of becoming unemployed is known to be greater among those who are chronically unfit, either physically or mentally. Dr Russell's suggestion—that differential selection of mentally unfit people can account for the difference that we reported between areas of high and low unemployment—is, in general, plausible. We do not think, however, that this factor is important in the interpretation of our findings.

Firstly, there were no areas of very low unemployment in our sample (as indicated in the report). Secondly, our sample contained only those currently registered as unemployed who had, prior to this, been employed for at least three months. Those on the long term sickness register were therefore excluded, as were people with no recent history of stable employment. Thirdly, previously reported findings from this study show that the scores of unemployed people on the general health questionnaire were unrelated to the probability of their subsequent re-employment. Within this sample, therefore, there was no evidence that