oversimplification of the risks of extravasation. In the illustrative case the extravasation most probably occurred from the proximally situated venepuncture sites, a documented but not widely appreciated risk.

Finally, the parochial nature of the President Truman "quotation" belies the extent of the problem. Extravasations are by no means the exclusive preserve of radiography departments.

We constructed this lesson because of our concern over the number of extravasation injuries which we are seeing. Are such injuries avoidable? We believe so, if clinicians are ever alert to the risks and take the necessary steps to minimise them.

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Patients who take overdoses

SIR,—Psychiatric education can certainly claim a triumph for the increased medical awareness about poisoned patients (adults and children) and their management in hospitals.

We wish to expand on some issues mentioned in Professor Neil Kessel's leading article (4 May, p 1297) in relation to children and adolescents. In our department of child and adolescent psychiatry in a general teaching hospital we deal with emergency cases of youngsters presenting with a range of self destructive behaviours. Our general psychiatric assessment leads to the differential diagnosis not only of accidental or deliberate self harm but also, especially for younger children, of child abuse—with intentional poisoning by the parent.¹

For those youngsters where the diagnosis is clearly deliberate self harm we supplement the traditional psychiatric history with a semi-structured research questionnaire relating to the concept of death. Recently Pfeffer² and Joffe and Offord³ have suggested that the concept of death is an important variable in assessing the prognosis of the current suicide attempt and the risk for future episodes.

Our initial clinical impression supports Orbach's view that in children an important distinction exists between the awareness of personal and impersonal death concepts.⁴ When this distinction is clarified with the child or adolescent a new awareness of the nature and potential consequences of their behaviour seems to become apparent to them. We are pursuing our study in the hope that a focus on and a discussion about the individual's immature concept of death may reduce the risk for further episodes. We would be happy to share our experience with others who are working in this challenging field.

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- Halasz G. Accidental poisoning in childhood. *Br Med J* 1984;288:408.
- Pfeffer CR. Suicidal behaviour of children: a review with implications for research and practice. *Am J Psychiatry* 1981;138:154-9.
- Joffe RT, Offord DR. Suicidal behaviour in childhood. *Can J Psychiatry* 1983;28:57-63.
- Orbach I, Glaubman H. The concept of death and suicidal behavior in children: three case studies. *J Am Acad Child Psychiatry* 1979;18:668-78.

"Missed pill" conception: fact or fiction?

SIR,—The report by Mr B G Molloy and his colleagues (18 May, p 1474) on folliculogenesis in users of combined oral contraceptives provides valuable additional information on a subject where

so much speculation is handicapped by lack of solid information. The absence of enlarging follicles at the end of courses shows that the (albeit rather small) peaks of luteinising hormone (together with follicle stimulating hormone) that occur at that time could not evoke ovulation, but the appearance at the end of the pill free interval shows that those surges in gonadotrophins promote a degree of follicular development that, given some subsequent stimulation, might permit ovulation to occur. The third scan seven days into the next cycle showed that all the developing follicles had completely involuted. The investigators therefore concluded that the risk of ovulation as a result of minor errors in tablet taking exists only in the first seven days of a course of pills and that the use of additional precautions when errors occurred should therefore be more stringent in the first seven days than at other times. They even suggest an extension of pill courses to 23 days per cycle so as to shorten the pill free interval and therefore the degree of preovulatory development of follicles.

While I accept their conclusions about the probability of ovulation, I do not their recommendations, which are the result of oversimplification. Though the evidence is sketchy, it was shown many years ago that even without errors in the taking of tablets, breakthrough ovulation occurred in about 6% of cycles. The extremely low pregnancy rates of about 0.1 per 100 woman years showed that other mechanisms must be providing a high degree of protection against conception when ovulation occurred. Two of those mechanisms have been shown to provide effective contraception when they are produced by the progestogen only pill—that is, the prevention of endometrial proliferation and the inspissation of cervical mucus. It has not been possible to study those two mechanisms separately, and since the pharmacodynamic effect of progestogens on cervical mucus declines rapidly one missed pill might result in loss of that effect. However, a quiescent endometrium could not undergo proliferation sufficient to permit implantation because of one missed pill, and probably not because of two or three consecutive missed pills. (If the presence of oestrogens in combined pills makes this argument seem illogical, it should be understood that every combined pill displays a dominance of the progestogenic effect, on both cervical mucus and the endometrium.)

The foregoing point is relevant in relation to the possible consequences of breakthrough ovulation at any point in the cycle. As far as a particular risk during the first seven days is concerned, another factor has been overlooked. This is the shedding of the endometrium that has taken place during the pill free interval. It seems highly improbable that even if the total effect of the (almost entirely suppressed) endogenous oestrogen plus the very small amount of oestrogen in the pill should be capable of overcoming the antiproliferative effect of the progestogen, it would be able to develop the endometrium to the point where implantation could occur within the first seven days of a course. By analogy the denuded endometrium in an untreated cycle when it is subject to the unopposed proliferative action of unsuppressed endogenous oestrogen probably requires at least 11 days' stimulation to become fit for implantation. The equivalent point in a course of pills is the sixth day.

Side effects—of whatever nature—being generally dose dependent, I should deplore any move to increase the number of tablets per course from 21 to 23, and I also see no justification for making any special recommendation about the use of additional precautions when pills are missed during the first seven days. A series of consecutively missed pills at the beginning of a course—that is, prolongation of the pill free interval by several days—would, obviously, create the most favourable conditions for conception, but this eventuality is covered by the manufacturers' present recommendations that additional precautions should be used from the time of any such major error in tablet taking until the next withdrawal bleed occurs. This is a simple and logical recommendation. The 14 day rule—that is, the use of additional precautions for the

next 14 days, no matter whether a withdrawal bleed occurs in the meantime or not—which is recommended by the Family Planning Association, is less logical and less simple, since the endpoint for the additional precautions is less easily identified than the endpoint defined by the manufacturers. The unsurprising findings of Mr Molloy and others do nothing to shift the balance in favour of adoption of the 14 day rule.

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Does unemployment kill?

SIR,—In recent times we have all learnt to treat with caution the judgment of economists, never more so than when there are major economic policy issues at stake. When viewed in this light it would be foolish to presume that the cautious conclusions of Dr Hugh Gravelle's Nuffield/York Portfolio report *Does Unemployment Kill?* (1 June, p 1667) represent the sole implications for economic or health policy of research in this area.

Despite its title, the paper discusses morbidity as well as mortality. However, in reaching the conclusion that unemployment has not been shown to be a significant cause of physical ill health, Gravelle takes no account of recent research linking unemployment with low birth weight,¹ reduced infant growth,^{1,2} bronchitis and heart disease,³ and poor health in families.⁴ Furthermore, he reviews early findings from the longitudinal study of the Office of Population Censuses and Surveys⁵ in preference to more recent ones,⁶ which show that much of the mortality attributable to unemployment is caused by organic disease. In showing raised mortality among the wives of unemployed men the more recent publication⁶ also counters Gravelle's suggestion that the high death rates of unemployed men may result from their poor health before they become unemployed.

One of the few studies quoted by Gravelle which is consistent with his conclusions on unemployment and physical health⁷ was (as he acknowledges) designed for another purpose and cannot claim any validity as a health survey instrument.⁸

There is strong support in published reports for Gravelle's conclusions that unemployment affects mental health and has independent effects on suicide. However, his major conclusion, that unemployment is not important in explaining variations in general population mortality, cannot pass unchallenged. The best evidence currently available yields an estimated mortality attributable to male unemployment in the United Kingdom of more than 3000 deaths a year⁹—surely a statistic demanding action from monetarists and Keynesians alike.

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- Cole TJ, Donnet ML, Stanfield JP. Unemployment, birth weight, and growth in the first year. *Arch Dis Child* 1983;58:717-21.
- Fox PT, Hoinville EA. Current social factors and the growth of pre-school children. *Proc Nutr Soc* 1984;43:79A.
- Cook DG, Cummins RO, Bartley MJ, Shaper AG. Health of unemployed middle-aged men in Great Britain. *Lancet* 1982;ii:1290-4.
- Fagin L, Little M. *The forsaken families*. Harmondsworth: Penguin Books, 1984.
- Fox AJ, Goldblatt PO. *Longitudinal study: socio-demographic mortality differentials*. London: HMSO, 1982. (Office of Population Censuses and Surveys Series LS No 1.)
- Moser KA, Fox AJ, Jones DR. Unemployment and mortality in the OPCS longitudinal study. *Lancet* 1984;ii:1324-9.
- Moylan S, Miller J, Davies R. *For richer, for poorer? DHSS cohort study of unemployed men*. London: HMSO, 1984. (DHSS Social Research Report No 11.)
- Scott-Samuel A. Unemployment and health. *Lancet* 1981;ii:953.
- Scott-Samuel A. Unemployment and health. *Lancet* 1984;ii:1464-5.