account of the thromboplastin calibration slope. This method of reporting would greatly benefit patients taking oral anti-coagulant drugs who move around the world and whose dosage is dependent on prothrombin time testing in several different laboratories.

If an international normalised ratio is accepted, the results of different therapeutic trials may be compared which will facilitate agreement on the optimum therapeutic ranges. The haemostasis and thrombosis task force of the British Committee for Standardisation in Haematology supports an earlier recommendation that a single thromboplastin range of 2.0-4.0 should be adopted for all clinical conditions.^{14 15} This is known to be safe¹⁶ but different optimum ratios have been proposed for different medical conditions—venous prophylaxis, arterial prophylaxis, and manifest thrombosis with variations for inpatients, outpatients, and surgical procedures.¹⁷ Prothrombin ratios of up to 5.0 using British Comparative Thromboplastin have been considered acceptable for patients in hospital provided that there are no contraindications,¹⁸ but such a level might be equivalent to a ratio of 3.1 if tested with rabbit thromboplastin. At present recommendations for optimum ratios must be related to the type of thromboplastin and to the mode of expression of the ratio, especially when a percentage in terms of saline dilution of the plasma is used. Here a 10% activity might correspond to an international normalised ratio of about 6.5. Use of an agreed international normalised ratio might avoid much confusion. The British Comparative Thromboplastin is generally accepted in Britain, so that a change to an international normalised ratio would cause little disturbance; an international normalised ratio of range 2.5-4.0 would correspond to a British Corrected Ratio of range 2.4-3.8 and an international normalised ratio of 5.0 to a British Corrected Ratio of 4.6. A major step towards the achievement of a standard ratio would be made if all workers on future trials reported their results as an international normalised ratio. Acceptance of this and the definition of optimum ranges for various clinical conditions together with quality control of laboratory tests¹⁹ and rigorous therapeutic control²⁰ should ensure that oral anticoagulant treatment is rendered both safe and effective in the future.

N K SHINTON

Consultant Haematologist,
Coventry and Warwickshire Hospital,
Coventry CV1 4FH

- ¹ Quick AJ. Prothrombin in hemophilia and in obstructive jaundice. *J Biol Chem* 1935; **109**:xxiii-iv.
- ² Poller L. Oral anticoagulant therapy. In: Bloom AL, Thomas DP, eds. *Haemostasis and thrombosis*. Edinburgh: Churchill Livingstone, 1981: 725-36.
- ³ WHO Expert Committee on Biological Standardization. Twenty-eighth report. *WHO Tech Rep Ser* 1977; No 610:1.
- ⁴ Biggs R, Denson KVE. Standardization of the one-stage prothrombin time for the control of anticoagulant therapy. *Br Med J* 1967; **i**:84-8.
- ⁵ Poller L. A national standard for anticoagulant therapy. The Manchester comparative reagent. *Lancet* 1967; **i**:491-3.
- ⁶ Thomson JM, Chart LS. The system for laboratory control of oral anticoagulant therapy using the British comparative thromboplastin. *Journal of Medical and Laboratory Technology* 1970; **27**:207-12.
- ⁷ Bangham DR, Biggs R, Brozovic M, Denson KWE. Draft report of a collaborative study of two thromboplastins (including the use of common abnormal plasma). *Thrombosis et Diathesis Haemorrhagica* 1970; suppl 40:341-51.
- ⁸ Bangham DR, Biggs R, Brozovic M, Denson KWE. Calibration of five different thromboplastins, using fresh and freeze-dried plasma. *Thrombosis et Diathesis Haemorrhagica* 1973; **29**:228-39.
- ⁹ International Committee on Thrombosis and Haemostasis. International Committee for Standardization in Haematology. Prothrombin time standardization: report of the expert panel on oral anticoagulant control. *Thromb Haemost* 1979; **42**:1073-114.
- ¹⁰ Loeliger EA, Besselaar AMHP, Van den Hermans J, Van den Velde EA.

Certification of three reference materials for thromboplastins. Brussels: Commission of the European Communities, 1981. (BCR information series.)

- ¹¹ Loeliger EA, Lewis SM. Progress in laboratory control of oral anti-coagulants. *Lancet* 1982; **ii**:318-20.
- ¹² Kirkwood TBL. Calibration of reference thromboplastin and standardization of the prothrombin time ratio. *Thromb Haemost* 1983; **49**:238-44.
- ¹³ WHO Expert Committee on Biological Standardization. *Requirements for thromboplastins and plasma used to control oral anticoagulant therapy*. Geneva: WHO, 1983.
- ¹⁴ Blackburn EK. Long-term anticoagulant therapy. *Prescribers' Journal* 1977; **17**:73-4.
- ¹⁵ Shinton NK. Therapeutic control of anticoagulant treatment. *Br Med J* 1982; **284**:1871.
- ¹⁶ Barkhan P. Therapeutic range with BCTR. *Thromb Haemost* 1976; **35**:751.
- ¹⁷ Loeliger EA. The optimal therapeutic range in oral anticoagulation. History and proposal. *Thromb Haemost* 1979; **42**:1141-52.
- ¹⁸ Poller L. British comparative thromboplastin therapeutic range. *Thromb Haemost* 1976; **36**:485.
- ¹⁹ Poller L, Thomson JM, Yee KF. Quality control trials of prothrombin time: an assessment of the performance in serial studies. *J Clin Pathol* 1979; **31**:251-3.
- ²⁰ Duxbury BMCD. Therapeutic control of anticoagulant treatment. *Br Med J* 1982; **284**:702-4.

Trends in induced abortion in England and Wales

The combination of medicine with anything to do with sex is said to have a paralytic effect on human resourcefulness. Nowhere is this more the case than with induced abortion. The subject arouses strong feelings and even violence: in the United States antiabortion groups have bombed clinics carrying out operations. The very strength of feelings both against abortion and in favour of its free availability is an argument for basing discussion—so far as possible—on objective data. Since 1968 health authorities have been responsible for providing induced abortions under the terms of the 1967 Abortion Act; they need to have reliable information for their planning.

After the 1967 Act the numbers of legal induced abortions performed on residents in England and Wales stabilised first at between 100 000 and 110 000 a year (equivalent to abortion rates of 11.5 per 1000 women aged 15 to 44).¹ These rates—considerably lower than those in the rest of northern Europe and North America—then began to fall in the early 1970s, when contraception became much more widely available. Since 1978, however, the numbers have increased progressively—to 120 600 in 1979 and 128 550 in 1981.^{2 3} In the hyperactive world of abortion politics such figures tend to be given more importance and meaning than is justified. In particular, reference must always be made to the age structure of the base population at risk and its related fertility patterns, aspects of which may fluctuate considerably over comparatively short periods of time.

A study⁴ analysed the trends in induced abortion and fertility using a novel method of statistical modelling developed by Osmond and Gardner for use with cancer mortality data.^{5 6} This method separates the contributions of factors associated with age, period, and cohort, which are clearly likely to play important and varying parts in patterns of fertility and abortion. The analysis showed that the age specific abortion rates increased from 1968 until about 1973, when the rates peaked for all ages; rates then declined until 1977 but have subsequently returned to higher levels. Two important conclusions emerged. Firstly, the recent changes were parallel to changes in the fertility rate; and, secondly, recent cohorts of women have shown a tendency to resort to abortion more readily.

The abortion rates and the ratios of abortions to live births and stillbirths were found to be strongly influenced by women's age, the cohort to which they belonged, and the year in question. As might be expected, fertility rates were greatest at ages 20-29, when pregnancies least often resulted in abortion.

Three clear period effects were identified in the rates. The first, lasting for several years after the 1967 Abortion Act, corresponded to a period of increasing uptake of newly available legal operations. The second period effect concerned fertility rates, which fell for all age groups from 1970 to 1976 and coincided with the increasing availability of contraceptive services. The third period effect was an increase in the fertility rates from 1976 to 1979, an increase which seemed to have been reflected in increases in the abortion rates.

Perhaps the most interesting finding concerned the cohort patterns, with the earliest cohorts having high values for abortion rates in association with high fertility rates. These were the women who became sexually active at a time when the only contraceptives available to them were the barrier methods and withdrawal—and they may well have continued with these methods after the introduction of oral contraceptives and the intrauterine device.

Later cohorts had lower fertility rates, but the most recent cohorts have shown a rise in abortion ratios: they are becoming pregnant less often, but when they do become pregnant they are more likely to have an abortion than their older sisters were at the same age—and the result has been an increase in abortion rates among young women.

Four factors have been suggested as causing increases in the abortion rates and ratios: disenchantment with the "safe" methods of contraception—in particular, oral contraception and the intrauterine device—after the publication of research findings about their side effects; the pressure on health authorities to reduce regional variations in the availability of abortion services; the reluctance of people to cope with an unplanned child because of the economic recession and the impact of a child on their disposable income; and the reduction in family planning clinics and sessions as a result of financial constraints in the Health Service.

An increase in the abortion rate is understandable as an early sequel to the adoption of birth control methods, since once people have decided to avoid pregnancy they might be expected to reject it when it occurs. Such an effect might be expected to last only until the whole population had acquired skill in the use of birth control methods, and this is borne out by the lower abortion ratios which occur with age, except with the very oldest fertile women. Furthermore, knowledgeable women may prefer to take a calculated risk of using less reliable but safer methods of contraception in the knowledge that very early abortion is itself very safe. It would be misleading, however, to allow this latter speculation to give a false emphasis. By the age of 20 over half of young people are sexually active, and the age group 16-24 accounts for 54% of all induced abortions in England and Wales.³

The decline in the number of conceptions (as defined by births and abortions) suggests that young people today seem to be making much greater use of contraception than was previously the case—though, despite the recommendation in the DHSS memorandum on family planning services which proposed "separate, less formal arrangements for young people," such arrangements remain unusual.⁷ The indications are that young people are willing to take advantage of appropriate services if they are provided.

Looked at from a rational, demographic point of view we should be doing much more in the way of providing such

services. The current cohort of 19 year olds is the midyear of the 1960s bulge and contains some 800 000 young people. We know the facts about their sexuality and their needs, but so far we do not seem to have done much to respond. It is, perhaps, the adults who are failing youth at present, and not young people who are in some way letting their parents down. In the 1950s faced with a bulge of school age children the nation found the wherewithal to provide additional school buildings and teachers; in 1983 where are the youth advisory clinics, counsellors, and doctors?

JOHN R ASHTON

Senior Lecturer in Community Medicine,
University of Liverpool,
Liverpool L69 3BX

¹ Ashton JR. Induced abortion and the health of women. *Update* 1982; 24:813-8.

² Office of Population Censuses and Surveys. *Abortion statistics*. London: HMSO, 1980. (Series AB 80/7.)

³ Office of Population Censuses and Surveys. *Abortion monitor*. London: HMSO, 1983. (Series AB 83/2.)

⁴ Ashton JR, Machin D, Osmond C, Balajaran R, Adam SA, Donnan SPB. Trends in induced abortion in England and Wales. *J Epidemiol Community Health* 1983;37:105-20.

⁵ Osmond C, Gardner MJ. Age, period and cohort models applied to cancer mortality rates. *Statistics in Medicine* 1982;1:245-59.

⁶ Osmond C, Gardner MJ, Acheson ED. Analysis of trends in cancer mortality in England and Wales during 1951-80 separating changes associated with period of birth and death. *Br Med J* 1982;284:1005-8.

⁷ Department of Health and Social Security. *Memorandum on family planning services*. London: DHSS, 1980.

Incontinence

Urinary incontinence remains a taboo subject to the public and to the medical and nursing professions; yet there is increasing interest in its investigation, treatment, and management. The prevalence of incontinence between the ages of 15 and 64 has recently been estimated as 8.5% of women and 1.6% of men.¹ For those over the age of 65 the figures rise to 11.6% of women and 6.9% of men.¹ The risk of incontinence in women is substantially increased with multiparity. One recent study showed that even in severe cases fewer than one third of incontinent patients were receiving help from the medical or social services.² In homes for the elderly run by the social services 17% of residents are incontinent,³ a major source of intolerance by staff. Incontinence is the reason that many elderly patients require institutional care; in one large geriatric hospital up to one third of patients are admitted because urinary incontinence makes management at home or in a home for the elderly impracticable (R Smith, personal communication, 1982).

The first assessment of an elderly patient with urinary incontinence may be done by a nurse specially trained to manage incontinence, who visits the patient at home.⁴ The nurse can reassure patients and advise about fluid intake and simple bladder training, and if appropriate she will encourage the recording of frequency and volume charts. Mobility in the home and easy access to toilet facilities are important factors. Simple aids or advice may be all that is required. The Association of Incontinence Advisors has been founded to encourage greater interest and to further education and training in all aspects of the management of incontinence. (Further information may be obtained from the association, c/o Disabled Living Foundation, 346 Kensington High Street, London W14.)