treatment may cause a substantial increase in the small number of asthmatic patients with severe airway hyperresponsiveness.¹ Our study shows a mechanism whereby asthmatic patients inadvertently stop their drug treatment. Spitzer *et al* found an increasing mortality with increasing use of β agonist delivered via a metered dose inhaler.² The higher the rate of use of the inhaler the greater the probability of running out of the drug. The evidence for this contributing to death due to asthma is compelling.

Drs Simpson, Levy, and Keeley suggest that education is the answer. They do not understand its limitations. An example of what may happen is given below.

A 16 year old girl with mild asthma requires β agonist treatment once a week. She has been well educated in the asthma clinic. Management accords with current guidelines.³ The patient is having problems with her boyfriend, and her mother has just bought a dog. Her asthma deteriorates and she takes salbutamol two puffs six hourly; the label on the drug reflects the prescribing instructions in the *British National Formulary*. One evening she needs her drug but has run out. She is educated but does not have the experience to interpret her predicament. She ran out of the drug because she was unable to assess the state of the canister of the metered dose inhaler accurately. She knows that she should keep a reserve inhaler, but, as with many patients, her compliance is poor.⁴ She needed more information to obtain a replacement metered dose inhaler in good time.

Education does not equal comprehension or compliance.⁴ Guidelines need to be constructed around behaviour that patients can achieve.

"Red weight" is entirely valid for preventive metered dose inhalers and is a useful concept in relation to the way patients actually use β agonists delivered via such inhalers, especially when control of asthma deteriorates.⁵ Despite F G Simpson's assertion, there are no published data on the drug content of puffs beyond the licensed number of expellants in metered dose inhalers.

We stated clearly in our paper that all patients within the stated age range were invited to participate. Patients unable always to maintain reserve inhalers should use a device that gives adequate warning of its end point, such as a Turbohaler. A counter mechanism must be incorporated into metered dose inhalers before they are considered to be safe for general use.

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Screening for breast cancer

Has no impact on mortality

EDITOR,—Minerva recently commented¹ on an article reporting that in the United States the incidence of breast cancer rose by 33% between 1973 and 1988 with no change in the mortality (per 100 000 population) from the disease.² James McCormick logically concluded from the findings

that the increased incidence was probably an artefact of mammography and that mortality is not influenced by mammography.³

In 1989, in an article published posthumously, Roberts confessed her disillusionment with the national mammography programme, to which she had devoted her last 10 years.⁴ She was dismayed by the untoward psychological and social consequences of the screening; she may have doubted that it could save lives. Her article provoked several letters from people who shared her reservations. In my contribution I calculated that advanced imaging with earlier eradication of the primary tumour could not pre-empt fatal secondary disease unless dissemination was commonly confined to the last third of the time elapsed since the tumour's initiation—which is improbable.⁵ My arguments were not refuted.

As the period covered by the recently reported data from the United States² included at least seven years in which mammography was quite widely practised, any effectiveness of screening should by now be reflected in a registrable reduction in mortality: it has not been. Is it not time that those people who recommended and promoted Britain's national mammography programme (including the Forrest committee) undertook and promulgated the rethink that Roberts recommended four years ago?

As things stand, the one possible benefit of the programme seems to be a modest reduction in the area of trauma inflicted by radical treatment of the primary tumour. This hardly compensates for the harm done: the failure to save lives, as is still confidently promised; the spread of anxiety, especially among women recalled for further examination; the addition of a year or more of dependency to the lives of women doomed to die of the disease; and the waste of money and resources.

This possible reckoning must be stated bluntly if we are to encourage more informed consideration of the rationale of any screening programme for cancer that may be contemplated in future. Advancing the time of diagnosis by using the most sophisticated imaging techniques does not achieve early diagnosis; and seeding of metastases is rarely a late expression of a tumour's capacity to disseminate.

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Mammography unsafe and unreliable

EDITOR,—J Chamberlain and colleagues' paper suggests that the NHS breast screening programme is on course to achieve a reduction in mortality from breast cancer.¹ In my opinion, based on many years of research, mammography has not lived up to expectations and its many deficiencies may endanger women's lives.

The Health Insurance Plan of New York mammography study of 1963-9 supposedly achieved its goal of a reduction in mortality from breast cancer of 30% by 1975,² and subsequently mammographic screening was hailed as lifesaving. At the time of that study, however, only general purpose x ray equipment was used, which is unsuitable for this examination. The Food and Drug Administration's data on mammography for 1985 showed that the average score for the quality of images obtained with general purpose x ray systems was poor (4 out of a range of 0-16). A mammogram

must have optimal clarity for the image to be interpreted correctly. Yet a nationwide survey of 226 mammography facilities in 1988 showed that the highest score for the quality of the image was 13 out of a possible 16, and this score was achieved by only 14 of the facilities surveyed, or 8%.³ These data indicated that mammography was neither safe nor reliable.

The cost in terms of false positive mammograms that lead to unnecessary investigations and surgery is not insubstantial.⁴ Lazaro *et al* stated that for every 100 women advised to undergo biopsy for findings noted on mammographic screening the specimen will be negative for cancer in between 58 and 86 cases.⁵ At the time that mammographic screening was introduced in the United States the Public Health Service reported that about 63 000 American women were diagnosed with breast cancer annually and about 26 000 died from the disease. Since then the incidence of breast cancer in women has risen constantly, from about 109 000 in 1980 to an estimated 182 000 in 1993. At the same time the mortality from breast cancer has risen from about 36 000 in 1980 to an estimated 46 000 in 1993. We are now experiencing an epidemic of breast cancer, contrary to the Health Insurance Plan Study's predictions of a 30% reduction in mortality.

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Hormone treatment for infertility

Restriction won't prevent multiple pregnancies

EDITOR,—Margaret Dolley writes that senior gynaecologists in Denmark have called for stringent regulations on hormone treatment of infertility.¹ The apparent assumption is that grand multiparity might be prevented if use of human menopausal gonadotrophin was restricted to public hospitals.

We doubt whether restricting use of human menopausal gonadotrophin to public or university clinics would prevent multiple pregnancies, although the number of occurrences would fall because fewer couples would receive treatment. Current methods of avoiding multiple pregnancy after treatment with human menopausal gonadotrophin are to withhold human chorionic gonadotrophin when more than two preovulatory follicles are ≥ 16 mm or oestrogen concentrations are above predetermined values and to give smaller amounts of human menopausal gonadotrophin for stimulation of ovulation.

Studies show that the method in which human chorionic gonadotrophin is withheld when more than two preovulatory follicles are ≥ 16 mm is ineffective because ovulation, conception, and multiple pregnancy can occur from any follicle that is ≥ 10 mm at the time that human chorionic gonadotrophin is given.^{2,3}

The second method—giving smaller amounts of human menopausal gonadotrophin—may result only in fewer women conceiving, because women who require this hormone for ovarian stimulation