other patients who require treatment for only short periods—for example, sodium cromoglycate for exercise induced asthma. In these circumstances it is inappropriate to determine levels of compliance on the basis of use of treatment over a whole year by identifying patients who were prescribed more than six corticosteroid inhalers or nine sodium cromoglycate inhalers. As a result, the compliance rate is likely to be underestimated.

Thirdly, the prescribing records were not validated independently (for example, against prescribing analysis and cost (PACT) data), though we recognise that this could not readily be undertaken in an age specific group.

Finally, the unit of analysis was a prescription or inhaler pack. No attention was given to the different formulations, strengths, or quantities prescribed; this could have been done by standardising the data by using defined daily doses. How were prescriptions for Rotacaps dealt with?

Although we are critical of the methods and analysis of this paper, we fully endorse the desirability of audit. This paper emphasises the importance of adequate records for the purpose and of a well tested standard as the baseline for audit.

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1 Warner JO. Review of prescribed treatment for children with asthma in 1990. *BMJ* 1995;311:663-6. (9 September.)
2 Morton-Jones T, Pringle M. Explaining variations in prescribing costs across England. *BMJ* 1993;306:1731-4.

More recent data suggest guidelines are being adhered to

EDITOR,—J O Warner found that too few children were prescribed preventive treatment and too many were prescribed oral β agonists in 1990-1.[1] Though international paediatric guidelines had been distributed, the British Thoracic Society's guidelines were published later, in 1993. With more widespread dissemination of guidelines in general practice and incentives for asthma clinics, shared care, and audit, trends in prescribing in primary care have probably changed.

We have data from a questionnaire survey of prescribing in chronic diseases by 1000 general practitioners, who provided data over random four week periods between July 1990 and June 1995 (the new and change therapy inquiry). The data presented refer to all newly started courses of treatment for asthma for patients aged between 5 and 18 (that is, the incidence of new prescriptions). The figures did not include repeat prescribing (analogous to the prevalence). Our results show that the proportion of prescriptions for asthma that were for new courses of inhaled steroids increased by 49·6% between 1990 and 1995, from 25·8% to 38·6% (table). Prescribing of new courses of oral bronchodilators halved. Although the proportion of sodium cromoglycate inhalers decreased by one third, general practitioners are not alone in making this deviation from the guidelines, as only 21% of hospital general paediatricians surveyed used sodium cromoglycate as the first step.[2]

These incidence data probably reflect new prescribing habits more accurately than prevalence data, as general practitioners are less likely to change established treatments in patients with stable disease.

These results suggest that the guidelines are now being more closely adhered to. We agree with Warner, however, that prospective trials of prophylaxis are needed, with emphasis on long term adverse effects, compliance, and the requirement for inhaled short acting β agonists.

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1 Warner JO. Review of prescribed treatment for children with asthma in 1990. *BMJ* 1995;311:663-6. (9 September.)
2 Robins AW, Lloyd BW. Most consultants deviate from asthma guidelines. *BMJ* 1995;311:508. (18 August.)

Author's reply

EDITOR,—It is inevitable that readers will have found weaknesses in my analysis of prescription data. There is, however, an urgent need to review prescribing in the light of the many published guidelines over the past five years, and it is regrettable that more robust data are not available.

A M Ross and D M Fleming point out that the rate of registration and de-registration of patients within individual practices over one year is up to 30·6%.[1] This, however, would make virtually no difference to the analyses. As just under a tenth of patients were being prescribed treatments for asthma in the one year period, this means that only 3% would be added to or subtracted from the total with asthma in the practice. As only half of these were prescribed any form of prophylaxis the difference would amount to 1·5%.

Ross and Fleming also point out that the management of asthma is dynamic in nature, with frequent modulation of treatment. In ideal circumstances this may be the case, but all too commonly it is not so. The dynamics come from the patients and parents themselves, who stop and start treatment without medical advice. Implicit in the comments of Ross and Fleming is that they seem not to believe that continuous prophylactic treatment is always appropriate. In questioning this dogma from published statements they are flying in the face of overwhelming evidence showing that continuous prophylaxis achieves the best possible outcomes. Intermittent use of inhaled steroids is an all too frequent practice; there is no precedent to suggest that it is of value. It must continue to be asserted that when a patient starts to take a prophylactic compound for asthma the likely duration of treatment will be measured in years, not months.

A recent study has shown that the longer that effective prophylaxis is delayed in school age asthmatic children the smaller the increase in lung function with growth.[2] This emphasises the need to start prophylaxis early once the nature of the disease is well established. Thus few asthmatic children were receiving inhaled prophylaxis either sufficiently early in the course of their disease or sufficiently consistently for me to consider that the treatment was being prescribed appropriately. This was not because patients were failing to seek consultations or repeat precriptions, because the rate of prescribing for β agonist inhalers was consistently high for all the categories of patients and was certainly higher than most would consider appropriate, at a rate of 3-4 doses a day. Indeed, in my own district a target has been set to reduce the ratio of inhaled bronchodilators to inhaled anti-inflammatory drugs prescribed by general practices by a quarter between 1993 and 1996. In 1993 and 1994 the ratio was 1·7:1.[3]

The information provided by Richard Martin and colleagues is timely. An investigation of new and changed treatment will undoubtedly provide important information, but the rate of prescription of prophylaxis was disappointingly low. Doctors in Britain are failing to follow the paediatric guidelines, which emphasise the use of sodium cromoglycate as the first step in prophylaxis.[4] In some countries adherence to the guidelines is much better.[5]

The authors of the two letters conflict on one point, with Ross and Fleming indicating a dynamic approach to the management of asthma with changes in treatment and Martin and colleagues suggesting that, once treatment has been established, it tends to remain unaltered. Whatever the minor disagreements, however, we all agree that large prospective studies of prophylaxis in practice are needed urgently; hopefully these will collect data on morbidity as well as on prescriptions and compliance.

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1 Morton-Jones T, Pringle M. Explaining variations in prescribing costs across England. *BMJ* 1993;306:1731-4.
2 Agertoft L, Pedersen S. Effects of long-term treatment with an inhaled corticosteroid on growth and pulmonary function in asthmatic children. *Respir Med* 1994;88:373-81.
3 Southampton and South West Hampshire Health Commission. *Annual report.* Southampton: SSWHHC, 1995:43.
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5 Korppi M, Kuikka L, Remes K. Preventive therapy for asthma in children; a 9 year experience in eastern Finland. *Eur Respir J* 1995;8:1318-20.

Prescribing of new courses of treatment for asthma for patients aged between 5 and 18 in general practice, July 1990 to June 1995. Figures in parentheses are annual market share (as percentage) of each type of treatment

	Jul 1990-Jun 1991	Jul 1991-Jun 1992	Jul 1992-Jun 1993	Jul 1993-Jun 1994	Jul 1994-Jun 1995	Analysis of trend*
Inhaled β_2 agonists	378 (37·1)	505 (37·5)	563 (38·2)	655 (39·1)	617 (36·9)	P=1
Inhaled steroids	263 (25·8)	393 (29·2)	482 (32·8)	566 (33·8)	646 (38·6)	P=0·002
Inhaled sodium cromoglycate	96 (9·4)	106 (7·9)	108 (7·3)	108 (6·4)	101 (7·2)	P=0·01
Oral steroids	77 (7·6)	131 (9·7)	149 (10·1)	158 (9·4)	150 (9·0)	P=0·5
Oral bronchodilators	205 (20·1)	211 (15·7)	169 (11·5)	190 (11·3)	158 (9·4)	P=0·01
Total	1019	1346	1441	1677	1672	P=0·01

*Simple linear regression analysis was applied to annual market share of each drug and to total number of prescriptions in final row.

Correction

Managing cleft lip and palate

Owing to an editorial error only one author was given for the penultimate letter in this cluster, which was sent by the Craniofacial Society of Great Britain (25 November, p 1432). There were in fact 10 authors, who make up the council of the society: D A SELL, specialist speech and language therapist; B C SOMMERLAD, consultant plastic surgeon; F B CHRISTIE, consultant orthodontist; M J W FERGUSON, dean of School of Biological Sciences; L F A STASSEN, consultant maxillofacial surgeon; V J RUSSELL, specialist speech and language therapist; M A P MILLING, consultant plastic surgeon; K F MOOS, consultant maxillofacial surgeon; J P MOSS, consultant orthodontist; and O FENTON, consultant plastic surgeon. The address for all of them is as published.