real risk should this happen that hospitals would indeed regard the Advisory Service as one of "them."

Sir Desmond also mentions how difficult it is to be a good adviser, and I am sure every member of the advisory service would agree with this. It is indeed difficult and demands more in terms of tact and personality attributes than simply being a good clinician or a good nurse. He doubts whether an atmosphere of mutual trust can be established if members of the team work for the advisory service for only about a year. The visit to a hospital only lasts a week or two, and it is in this period that an atmosphere of trust must be built up. I have no doubt that teams vary in their ability to do this and equally that hospitals vary in their willingness to confide and in their ability to make use of the service we have to offer.

With the present arrangements whereby staff from the Health Service work with the advisory service for periods between six months and two years there is a constant flow of staff who bring their own expertise and have an exceptional opportunity of seeing services across a wide area of the country. They then return to their own base to implement such good ideas as they have seen elsewhere. More than 50 such secondments have now occurred, and this would seem to be an effective way of disseminating good ideas and practices.

Sir Desmond also mentions that there would be difficulties if individuals are criticized publicly or in reports. I entirely agree with this. Teams are instructed to discuss and report on the services they see and not on the individuals running them. Nevertheless, this poses problems, since if one is discussing, for example, the medical services of a hospital and there is only one doctor there it may be very difficult to avoid comments which look like personal criticisms. Equally, however, it would be quite wrong to avoid commenting on services, particularly when patient-care may suffer, simply because it was feared some individual might take offence. It is of some interest perhaps that teams have been criticized as often for failing to make criticisms as they have for making criticisms that were regarded as too outspoken.

It is quite clear that Dr. J. L. Crammer (18 December 1971, p. 746) and I will not agree on some matters of fact as well as on some matters of opinion. It is equally clear that he and I agree that an advisory service should be independent. He implies that we are advocating a policy for hospital social workers which is determined by the Department of Health ("One standard, rigid plan, hatched in Southwark. . ."). In this particular instance there is no doubt he is wrong, since at the time when I am writing this letter the Department of Health has not stated what the policy will be in the case of hospital social workers. Clearly I cannot be propagating a policy which has not even been decided upon. Many hospital social workers have expressed anxiety about their future links with the local authority services, and I have advised the Department of Health to come to a decision. The social workers with the Hospital Advisory Service have usually had experience of hospital social work, local authority social work, and sometimes social work for voluntary organizations. It has been their professional

opinion that social workers in hospitals should consider close links, joint appointments, or secondments from the local authority service as the right way to develop the social services. Many hospital staff have criticized the new local authority social work service. Others, however, have welcomed it, and now find that the service they get is better than before. As in other fields, the discontented are often more vociferous than the satisfied.

Another point he makes about nurse/patient ratios is one I have made repeatedly in a number of hospitals, particularly those with geriatric and chronic sick patients. I have pointed out on many occasions that nurse/patient ratios can be determined only by local circumstances, the local buildings, and the local patient dependency. I am sorry I am unable to give all the reports (450 to date) to Dr. Crammer to read, but I have no doubt that if he could do so he would see that most of his allegations are quite erroneous and, indeed, he is making the very points that I have made repeatedly myself.

Lastly, I wish to object to your publication in Dr. Crammer's letter of parts of a confidential report which was clearly marked "not for publication."—I am, etc.,

A. A. BAKER
Director,
Hospital Advisory Service

Sutherland House,
Sutton, Surrey

These results show that the mean number of puffs obtained from each aerosol was greater than the number stated by the manufacturer for all four brands. For three out of the four, this mean result was one standard deviation greater than the stated number. For the fourth brand, however, the stated number of puffs per aerosol was well within one standard deviation of the actual mean. Only one brand gave the weight of the material contained in the canisters, and the mean actual weight was found to be 2 g above this with a standard deviation of only 0.2 g.

Two aerosols from each brand were deliberately not shaken. When tested in this way, these gave a number of puffs very close to the mean. While shaking the canister may well influence the dose of the drug administered in each puff it does not appear to alter the total number of puffs given.

We conclude therefore that for three of the four brands, at least for the canisters tested, the complaint of insufficient puffs per aerosol is probably due to observer error on the patient's part, and may represent another example of aerosol abuse.—We are etc.,

R. J. DAVIES
M. F. D'SOUZA
S. P. SIMMONDS

Department of Clinical Immunology,
Brompton Hospital,
London S.W.3

Sickle-cell Trait and Altitude

SIR,—Dr. R. L. Green and others (4 December, p. 593) have written an article which has serious implications, and for this reason it needs very careful scrutiny. Apart from the incongruity of publishing a case (the Ghanaian nurse hospitalized in Accra) which they neither personally investigated nor supervised, the authors have perpetuated the confusion which has for several decades surrounded the use of the term sickle-cell trait especially in relation to aviation. Evidence often cited for sickle-cell trait patients having splenic infarcts while flying, or dying suddenly at high altitudes must be completely reviewed in the light of two very important facts:

(1) Before the discovery of haemoglobin C in 1951 by Itano¹ symptomatology in what was in fact haemoglobin SC disease was ascribed to the sickle-cell trait.

(2) The great majority of published work after 1951 to the present day on symptoms in "sickle-cell traits" under normal physiological conditions ignore quantification of A₂ or S haemoglobin fractions, or both.

Referring to Sullivan's description² of

Puffs per Aerosol

SIR,—Many patients report to doctors, pharmacists, and manufacturers that the pressurized bronchodilator aerosols which they have been prescribed for their asthma fail to give the stated number of doses. This is often the reason suggested by patients who need a further aerosol before the calculated time interval (according to dosage) has elapsed. Following a report by a policeman, who recorded that two of his daughter's aerosols had given less than half the indicated dose, we decided to test the quality of these products both in terms of the weight of the drug and the number of doses given.

The four most commonly used aerosols in this hospital were studied—namely, Alupent, Medihaler, Isomist, and Ventolin. Ten canisters from each brand, drawn from stocks already present in the pharmacy, were used. The 40 aerosols were weighed and then tested by the three of us, strictly adhering to the manufacturer's instructions. Each canister was shaken between each puff, and the number of puffs recorded on a cell counter. The results are shown in the Table.

Trade Name	Manufacturers Stated No. of Doses	Actual No. of Doses		
		Mean	Range	Standard Dev.
Alupent	300	363	346—390	±14.0
Medihaler ..	400	433	414—470	±18.4
Isomist	300	330	259—390	±45.8
Ventolin	200	223	202—240	±15.4

Trade Name	Manufacturers Stated Weight of Contents	Actual Weight of Contents in Grams		
		Mean	Range	Standard Dev.
Alupent	Not Stated	23.2	22.3—23.8	± 0.4
Medihaler ..	Not Stated	15.6	15.2—15.9	± 0.2
Isomist	Not Stated	19.9	15.0—20.9	± 1.7
Ventolin	17.0 G	19.0	18.5—19.3	± 0.2