institution. As laboratories cannot be brought to patients, patients must sometimes be brought to laboratories. On balance this seems to be a situation where this applies.—I am, etc.,

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Using Computers

SIR,—The paper by Mr. S. P. Watts and Dr. E. D. Acheson (25 November, p. 476) calls for two comments. Their study is not essentially a computer method in the accepted sense of the term. It has been done manually. It could certainly be done with business machines. Of course, it is easier with a computer. Hospital activity analysis can provide "treatments" or "persons." It is a matter of input organization (an identity-fix in particular) and programming. There is no "error" between one and the other. They are different things. For year-to-year comparisons "treatments" may be a sufficient indicator. For true morbidity measurements "persons" are inadequate, since they form only the hospital tip of the iceberg.

But, as in all statistics, it depends on what you want to use the rates for. If it is for hospital management—for example, the efficient use of resources—then the "spell" is the right unit. If for disease management—for example, for diagnosis symptom matrices—then the individual "person" record updated with the whole medical history (inside or outside the hospital)—that is, a full-blooded community health record system—is needed.

Hospital activity analysis is intended to lead into this,¹ and some experiments are already being made to extend hospital activity analysis in this direction. In the long run the unified record will pay bigger dividends than record linkage.—I am, etc.,

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REFERENCE

- ¹ Benjamin, B., *Proc. roy. Soc. Med.*, 1967, 60, 809.

Animal Reservoirs of Salmonellae

SIR,—I read with interest Dr. L. T. Newman's letter (4 November, p. 296) on the dangers of salmonella infections from pet tortoises and Dr. W. H. Parry's (25 November, p. 486) on the similar dangers from a pet terrapin. I am glad they have stressed the very real risks of animal reservoirs of intestinal infection which so often go unrecognized. Salmonella infections are far from rare¹ and thousands of new cases occur each year in Britain. In 1965 there were 832 cases of paratyphoid fever alone in England and Wales. The paratyphoid fevers may not always cause gastrointestinal symptoms and the carrier state is common and difficult to eradicate.² In addition to the typhoid and paratyphoid fevers salmonella infections may be far from minor illnesses,³ and a single outbreak in Sweden of *Salmonella typhimurium* was reported which caused 7,717 cases with 90 deaths.⁴

Certain preserved foods are universally recognized as potential sources of salmonella infections. It is not so well known that

nearly every animal in the world, both wild and tame, may carry salmonellae in its gastrointestinal tract, including dogs, foxes, horses, cattle, swine, sheep, goats, hedgehogs, pigeons, and even the ticks, lice, and fleas that feed on infected swine and other animals.⁵ Even the lion is not exempt,⁶ though it could hardly be classified as a pet except perhaps in Ethiopia.

Pet tortoises are a real hazard, but reported infections in iguanas, snakes, and lizards⁷ are more academic than real. As the festive season approaches, however, it is a salutary thought to remember that domestic poultry constitutes the largest single reservoir in nature and that turkeys are especially affected. Some 41% of turkeys in California were found infected with salmonellae.⁸ The canary may be affected⁹ and the dog is a frequent host. In 100 dogs examined in the U.S.A. 18 were found to have salmonella infections, most of which were pathogenic for man. In Norway an infected dog was found to be responsible for six cases of paratyphoid in human beings.¹⁰ In Florida greyhounds were routinely tested, and between 32% and 55% of all dogs were found to be carriers of salmonellae.¹¹ Dogs, after swine, were found to be the most important asymptomatic carriers and 40% of cases were due to *S. typhimurium*. Dogs and cats have been found to be responsible for *S. choleraesuis* transmission to children,¹² and 13.2% of healthy dogs in the U.S.A. were found infected with salmonellae and over 1% of cats in England.⁷

Obviously many salmonellae in animals are non-pathogenic for man. A number may be, however, and the possibility of an enteritis being spread by a pet should always be borne in mind, especially in young children with an undiagnosed gastroenteric infection.—I am, etc.,

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Improving the Psychiatric Services

SIR,—There is a great deal of evidence indicating that readmission rates for discharged ex-psychiatric hospital patients are less among those provided with reasonably effective psychiatric aftercare.¹⁻⁴

Psychiatric patients can cause great disturbance and trial to others when left at home. Visiting can provide early warning that modification of treatment or persuasion to take tablets has become urgent. Thus in quite a number of these patients a relapse

can be averted. I find that a large number stop taking their tablets, and that a recurrence of symptoms within a few weeks follows. When there is no follow-up the patient will often not visit a doctor. Relatives are diffident about complaining. Maintenance of morale in many depressive patients does also appear to depend to some extent upon follow-up, and there being somebody, perhaps outside the immediate circle of the patient, giving disinterested help and caring. Dudgeon⁵ noted that as many as 23% of 471 patients seen a year after leaving mental hospitals had had no contact with a doctor or any other type of trained mental health worker since discharge.

The consequences of a significant number of schizophrenic patients stopping tablets have been outlined.¹⁻⁴ I have seen not one but a number of patients descend to further suicidal attempts following sudden cessation of antidepressant drugs. If in addition to cessation of drugs they are discharged from psychiatric outpatient clinics then it would seem vital that they be visited by someone from the mental welfare services.

In 1952 Dr. Arthur Pool initiated a six-week-in, six-week-out geriatric service in Oldham, with an associated day hospital. This alleviated the situation and did relieve many people with elderly relations as well as the patients. Spread of this system would appear to be well worth while and within the scope of numbers of existing institutions and staffs. As part of this scheme all relatives undertook to have their patients home at the end of the period so that everyone could benefit. They were made to realize that the scheme could only work widely if this was kept to. There was free use of admissions of the elderly, so that the relations who were doing their bit by keeping them at home could get off for needed holidays. Keystones in this system were the co-operation of geriatricians and of the ambulance department, which we had.—I am, etc.,

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Intussusception Due to Hamartoma

SIR,—A rare lesion of the base of the appendix may have initiated acute appendicitis and subsequent intussusception of the caecum, and is reported below:

A diagnosis of acute appendicitis was made on a 10-year-old boy, and at operation an acutely inflamed appendix was removed and the stump buried with a purse-string suture. Apart from oedema and local fibrinous exudate over the ileocaecal region no other abnormality was noted. The histology of the excised appendix showed acute appendicitis. After operation he made rapid progress, but on the sixth day complained of colicky abdominal pain. There was some tenderness elicited over the site of the scar, but the symptoms rapidly subsided and he was discharged home on the ninth day.

Two weeks later the patient complained of several brief attacks of colicky central abdominal pain, and during one of these his general prac-