man and deputy chairman) to be appointed by the Health Ministers after consultation "with such organizations as appear to them to be representative of the medical profession." The Corporation would appoint its own staff, who would be paid by the Exchequer. It would operate on a commercial basis (it would charge interest on its loans) and would be expected over a period to break even financially. The Corporation would have power to borrow up to £10 million to begin with, but this sum could be increased to £25 million by Ministerial order. Its main function would be to make loans to general practitioners in the N.H.S. to enable them (*a*) to provide, or acquire a share in, premises used or to be used, in whole or in part, for the provision of such [general medical] services; (*b*) to alter, enlarge, improve, or repair such premises; (*c*) to acquire any land required for the erection of or in connexion with the use of such premises; (*d*) to repay any loan raised by them for any such purpose. The Corporation would also have power to purchase sites to let to doctors on building leases. It may also in due course, if authorized by the Ministers, finance the purchase of equipment or furniture.

The purposes for which the Corporation would be able to make loans are almost identical with those suggested in the Charter. All doctors would be eligible for assistance, which is not the case with the existing Group Practice Loans Scheme, which excludes doctors not in group practice. It seems likely that that scheme will now be redundant. Taken in conjunction with the provisions of the improvement grants scheme,[4] under which a grant of one-third of the cost of improvements to practice premises may be received, the new proposals should make it possible for any doctor to borrow the capital needed to equip himself to practise modern medicine as he would wish. A loan will appeal to those who wish to have the independence that goes with ownership. It should be noted, however, that the Corporation would have to comply with any directions "given from time to time" by the Ministers, and that their approval "of any premises or other land or works" might be required. These stipulations may be no more than merely prudent in launching an experimental scheme with Government backing. Nevertheless, the activities of the Corporation could greatly influence the future of general practice. The role of the central advisory committee (on which the profession would be represented) which the Minister agreed[1] should be appointed to advise on policy and questions of priority could be onerous.

The second purpose of the Bill is to enable general practitioners in the N.H.S. to be paid by salary. This involves repealing section 10 of the National Health Service (Amendment) Act, 1949. This section added, at the specific request of the medical profession, a proviso to subsection (1) of section 33 of the Act of 1946 (and to subsection (1) of section 34 of the Act of 1947 which refers to Scotland) prohibiting a full-time salaried general-practitioner service. It reads: "Provided that the remuneration to be paid under such arrangements to a practitioner who provides general medical services shall not, except in special circumstances, consist wholly or mainly of a fixed salary which has no reference to the number of patients for whom he has undertaken to provide such services." The "special circumstances" referred to are covered by section 43 of the 1946 Act (section 44 of the 1947 Act) which enables the Minister to make such arrangements as appear to him necessary, irrespective of the regulations under the Act, to provide general-practitioner services when he is satisfied that the general practitioners in any area "are not such as to secure the adequate provision of the services in question."

The Minister of Health has been advised that the special circumstances mentioned in section 10 of the 1949 Amending Act, and provided for in section 43 of the 1946 Act, do not apply to the circumstances in which it has been agreed,[5] at the profession's request, that groups of doctors should be given the choice of payment by salary. Therefore repeal of section 10 of the Amending Act of 1949 is necessary.

The loss of this statutory guarantee that salaried service could not become the rule in general practice will seem to many an unfortunate breach in the profession's cherished defences against a method of payment which has always been considered by the majority of doctors to be unsuitable for general practitioners. However, the Bill provides safeguards. Section 10 of the new Bill states that a general practitioner shall not be paid wholly or mainly by fixed salary except where: "(*a*) the arrangements are made by virtue of section 43 of the . . . Act of 1946 or section 44 of the Act of 1947; or (*b*) the services are provided in such circumstances as may be prescribed *and the practitioner consents*" (our italics). Section 10(2) states that before making regulations prescribing any circumstances for the purposes of this section the Ministers "shall consult with . . . the medical profession." These provisos are in harmony with the Minister of Health's statement in his letter to the Secretary of the B.M.A. (printed at p. 31 of the *Supplement*) that he has no wish to introduce a salaried service against the wishes of the profession. It remains to be seen how many doctors will wish to be paid by salary. That will be the measure of the impact of this part of the Bill on medical practice.

Hospital Staphylococcal Infection

Much has been written in recent years about cross-infection in hospitals, particularly with staphylococci. Before deciding on the necessity of some of the suggested remedies it is advisable to assess the magnitude of the problem, and this has been attempted by a working party of the Public Health Laboratory Service, whose report appears at page 313 of the *B.M.J.* this week. This was a collaborative study at 15 centres, of which eight provided most of the data obtained by a series of exactly defined bacteriological tests applied at necropsy, staphylococci being looked for in 10 different situations. The tests were applied at 470 necropsies, which constituted about 10% of those carried out at the centres taking part. It was suggested that two conducted on an agreed day of the week should be chosen, that young patients should be included wherever possible, and all dying between the ages of 1 month and 15 years. There was a control series of 125 patients dying outside hospital, and they were supposed to include equal numbers of traumatic and non-traumatic deaths. Presumably these were sudden deaths (59 were cardiac). Only 14 were victims of "accidents," and the series is not as comparable as would have been one of patients dying at home of the mainly chronic diseases that affected patients in the hospital series, but necropsies on an adequate number of such cases would have been unobtainable.

[1] *Brit. med. J. Suppl.*, 1965, **1**, 238.
[2] National Health Service Bill, 1966. H.M.S.O., London. Price 1s. 6d. net.
[3] *Brit. med. J. Suppl.*, 1966, **1**, 113.
[4] Ibid., 1965, **2**, 218.
[5] Ibid., 1965, **2**, 153.

Staphylococcal infection was considered to have been a contributory cause of death in 41 patients of the hospital series of 470 (8.6%). Only 2 of these were children and only 4 under 50 years old ; yet in the total series of necropsies 99 of the patients were below that age. The authors do not discuss age as a factor in liability to hospital-acquired infection, but these figures suggest it is important—that in fact the victims are in the main old or elderly and debilitated by other disease. Thirty of these 41 infections fall into a single category—staphylococcal pneumonia. Of the remaining 11 two were admitted with staphylococcal septicaemia, leaving 9 infections acquired in hospital, comprising one each of septicaemia, meningitis, empyema, and generalized dermatitis, and 5 of post-operative enterocolitis following treatment with a broad-spectrum antibiotic.

For the 30 patients with staphylococcal pneumonia the disease was evidently in most cases a terminal event from which recovery was not to be expected. The authors admit a very natural uncertainty about the responsibility of staphylococci for some of these infections. There were 96 pneumonias in all, and staphylococci were recovered from the lungs of these 30, but they were also found in the lungs of 92 other patients without pneumonia. This total of 122 (26%) contrasts with the finding of staphylococci in the lungs of only 6 (4.8%) of those brought in dead. This is the most novel finding in the survey, and suggests that patients in hospital are liable to become "bronchial carriers" of staphylococci in the ward. These organisms were phage-typed, and many belonged to types such as 80/81 with a high capacity for spread : most of them were also tetracycline-resistant. It would be interesting to know whether this invasion of the bronchi is a terminal phenomenon, occurring only when secretion begins to accumulate, or whether the organism can establish itself in a relatively normal bronchial tree.

How these findings should be interpreted depends in part on the structural merits and standards of medical and nursing care in the hospitals in which the survey was conducted. Provided they represent a fair cross-section of hospitals in this country, the results are reassuring. The frequency of staphylococcal infections in hospitals has been increasing throughout the world. D. E. Rogers[1] recounts his experience of it in the New York Hospital, and M. Finland and his colleagues[2] present an even more alarming picture of the rise in frequency of both staphylococcal and coliform infections at the Boston City Hospital, mentioning that death from septicaemia has been commoner recently than it was in 1935. These authors point to one reason for it—the deterioration in patients' resistance owing to greater age, more radical surgery, more drastic radiotherapy, and treatment with corticosteroid and antimitotic drugs. Rogers also lays a large share of the blame on indiscriminate antibiotic treatment, especially for prophylaxis.

A remark in Rogers's paper is apposite to the present survey : "The staphylococcus appears to have displaced the pneumococcus as the invader in terminal illness." The 30 patients with pneumonia are perhaps an illustration of this, but if no staphylococcus had been there would not most of them have succumbed to some other infection ? Viewed in this light, this series presents no case for drastic measures of prevention. Precautions which are known to be valuable in preventing staphylococcal cross-infection differ in feasibility and cost. Those which should always be practicable include efficient sterilization and disinfection, the exclusion of staff with any septic lesion, good aseptic technique, and restrictions on the use of antibiotics. Those sometimes unavailable and expensive to provide are adequate isolation facilities both for infected patients and for those specially susceptible to infection, and ventilation systems which ensure that contaminated air does not reach other parts of the unit. A laboratory service geared to keep constant track of the staphylococcal population among both cases and carriers is perhaps another luxury which not every hospital can afford. A sense of proportion and some willingness to compromise in dealing with this problem will be necessary for some time to come.

The results of a companion study to this one, also conducted by the Public Health Laboratory Service, but by different methods, have recently been reported elsewhere.[3] This concerned the acquisition of infection in medical wards in 13 provincial hospitals, and relied on routine laboratory findings, no special bacteriological methods being used. The results emphasize the influence of age and of certain primary diseases in producing susceptibility to hospital infection, which occurred in 345 out of a total of 6,740 patients, and was considered to have contributed to death in 59. There were 110 staphylococcal infections, but only 12 were fatal, 8 of these taking the form of pneumonia ; the total figure for pneumonia was 43.

Finally, a study concerned with the mode of spread of staphylococci, by E. A. Mortimer and colleagues, of the Western Reserve School of Medicine, Cleveland, is reported at page 319 of this issue of the *B.M.J.* These authors conducted an ingenious and rigidly controlled experiment in a babies' nursery which shows that airborne transmission is of much less significance than manual in conveying staphylococci from one baby to another. These findings will be helpful in devising measures to control infection in maternity units, and may well be applicable, with some reservations about the nature of the source of infection, to hospital wards of other kinds.

Surgery for Mental Illness

In a useful review of the surgical treatment of mental illness M. A. Falconer and P. H. Schurr subdivided the modified procedures which have largely replaced the standard prefrontal leucotomy into five groups. These were: local cortical extirpation, cortical undercutting, modified leucotomy, anterior temporal lobectomy, and stercotactic procedures.[1] "These modifications," they point out, "have aimed at interrupting specific parts of the frontal lobes or their connexions, and at achieving therapeutic effectiveness with the minimum of persistent undesirable effects on the personality." A measure of the progress which has been made towards gaining anatomical precision is well shown in a recent paper by G. Knight from the Department of Surgery at the Postgraduate Medical School, London.[2] Knight's extensive experience with restricted orbital under-

[1] Rogers, D. E., *Ann. intern. Med.*, 1956, **45**, 748.
[2] Finland, M., Jones, W. F., jun., and Barnes, M. W., *J. Amer. med. Ass.*, 1959, **170**, 2188.
[3] Public Health Laboratory Service, *J. Hyg. (Lond.)*, 1965, **63**, 457.

[1] Falconer, M. A., and Schurr, P. H., in *Recent Progress in Psychiatry*, 1959, **3**, 352.
[2] Knight, G., *J. Neurol. Neurosurg. Psychiat.*, 1965, **28**, 304.
[3] Birley, J. L. T., *Brit. J. Psychiat.*, 1964, **110**, 211.
[4] Report to the Medical Research Council by its Clinical Psychiatry Committee, *Brit. med. J.*, 1965, **1**, 881.