

chemical abnormality. Examples are anencephaly, encephalocele, and meningomyelocele. Further development is needed here of techniques such as fetoscopy and ultrasonography to detect at least the more serious external congenital malformations.

¹ Ferguson-Smith, M. E., Ferguson-Smith, M. A., Nevin, N. C., and Stone, M., *British Medical Journal*, 1971, 4, 69.

² *British Medical Journal*, 1971, 4, 245.

³ Gerbie, A. B., Nadler, H. L., and Gerbie, M. V., *American Journal of Obstetrics and Gynecology*, 1971, 109, 765.

⁴ O'Brien, J. S., et al., *Science*, 1971, 172, 61.

⁵ Navon, R., and Padeh, B., *British Medical Journal*, 1971, 4, 17.

Health Departments Galore

The annual reports of the Chief Medical Officer of what is now the Department of Health and Social Security have shown for some years that the public health of Britain is not so good as it should be. This must to some extent be a subjective judgement, for countries vary so much in their history, economy, and climate—to mention only three influences on the health of their peoples—that comparisons can be made only with many reservations. But in a list of countries comprising those of West and East Europe, Australia, Canada, New Zealand, the U.S.A., Israel, and Japan the index for stillbirths and infant mortality places England and Wales only slightly above the middle. When the expectation of life at 1 year of age is chosen for comparison, the men of England and Wales come off worse still, though the women are much better, with those of only five other countries having a greater expectation of life.

These comparisons appear in the Chief Medical Officer's report for 1970,^{1 2} and he rightly emphasizes a probable connexion between the dramatic reduction we have seen in maternal mortality, now as low as anywhere in the world, and the "confidential inquiries into maternal deaths" that have proceeded for 20 years. If similarly well-organized inquiries under the seal of confidence could be more generally carried out than they have been, remediable defects in the management of patients might well be discovered. To this end more epidemiologists expert in the study of non-communicable diseases are required, together with the backing of suitably staffed units. The inquiries that would attract their attention are numerous, for lack of resources at present means that even the killing diseases such as the cancers are wide open for investigation. According to the C.M.O. one authoritative opinion is that 80% of cancers may have environmental causes.

Now that the statistical treatment of data has won success in a hundred different ways some thought should be given to the manner in which national data are published in the United Kingdom of Great Britain and Northern Ireland, to give the full title of a nation that includes three separate registrars general and five health departments. Apparently one consequence of the recent establishment of a separate health department in the Welsh Office is that the statistics for Wales are no longer to be included in those for England that come from the Chief Medical Officer in London. Presumably they will appear in a separate publication, probably on a different date and, if Scotland and Northern Ireland are any guide, differently tabulated. Without in any way sinking the identity of the constituent parts of the United Kingdom, whose unity has traditionally given much scope for individuality, it ought to be possible to produce health statistics of exactly the same kind at the same time so that they may be analysed together where

appropriate. If Cornwall consents to appear in the same volume with Lancashire, surely Merioneth might continue to appear with Norfolk.

¹ Chief Medical Officer of the Department of Health and Social Security, *On the State of the Public Health* (Annual Report for the Year 1970). London, H.M.S.O., 1971 (95p net).

² See *British Medical Journal*, 1971, 4, 244.

Mental Hospital Revolution

The Mental Health Inquiry is concerned with the collection and collation of inpatient statistics in psychiatric hospitals and units in England and Wales. Since 1949 four reports have been published, of which the latest¹ relates to the state of affairs in 1969. Each report has followed more or less the same lines, but this one boasts one most important addition, a paper entitled, "Changes in the Number of Patients in and Admission to Mental Illness Hospitals in England and Wales over the Period 1954 to 1969." This summarizes the way in which the psychiatric services changed during the period.

The most dramatic change is the fall on a national level by 31% in the number of inpatients per 1,000 population. On a regional level, however, the fall was anything but uniform. In the Oxford region, for example, there was a fall of 45%, whereas in Liverpool it was only 18%. This was in spite of the fact that Oxford had the least number of inpatients in 1954 and Liverpool had nearly the most. Oxford's success in the continuing reduction in the number of inpatients—if indeed this in broad sociological terms is necessarily a success—might have been attributable to a corresponding increase in extramural facilities for treatment. It is somewhat mystifying then to learn that this is not so and that Oxford had the fifth lowest number of outpatient attendances and Liverpool the highest.

There are also irregularities in the age groups involved in the fall in the number of inpatients. In the 25-44 group the reduction nationally was about one-half, but above and below these ages the numbers of patients in mental hospitals increased. The number of children under 15 rose from 554 in 1964 to 776 in 1969, reflecting the increase in the number of beds allocated to child and adolescent psychiatry. Far more important is the sharp increase in people aged 75 and over representing, 22% for men and 12% for women inpatients. It is in the context of the aged that the report allows itself a glimpse into the near future and issues a solemn warning which must not be ignored. It states categorically "In the next decade the population of persons aged 65 and over will increase by almost one million and of these about half a million will be aged 75 and over; if the current pattern of hospitalization and trends continue, these would require an extra 8,000-9,000 beds mostly for persons aged 75 and over. Again on the basis of existing trends by the end of the next decade almost two-thirds of the patients in mental illness hospitals might be aged 65 and over." What, in the light of this prediction alone, would the social repercussions be if the Hospital Plan of 1962 were put into effect and half the British mental hospitals were eliminated by 1975?

In numbers of admissions a most remarkable change is seen. They rose by 150%, of which 50% were readmissions, reflecting a "switch from long-term inpatient care to shorter but more frequent spells in hospital and the development of extramural hospital and local authority services," the report concludes.

What the report does not do to any great extent is to interpret the pattern of change. One important conclusion to emerge is that in the provision of psychiatric facilities it is impossible to legislate on a national basis. Psychiatric morbidity in a region is as important as the size of the population, if not more so, and could well account for the differences between Oxford and Liverpool. Again, the reduction by half in the inpatient population in the 25-44 age group could be accounted for in part at any rate by the increase between 1961 and 1969 in the number of offenders remanded in custody for psychiatric report from 6,366 to 13,452. A considerable percentage of these are known to have been discharged from psychiatric hospitals within the previous year. How many of the same group are at present in reception centres or in doss houses or sleeping rough? And of those patients who have been discharged or redistributed in society how many absconded, or discharged themselves against medical advice, only to be swept back via the police or as social emergencies? Some must be contributing to the staggering increase in the admission or, rather, readmission rate to a point where the revolving door is beginning to spin. Answers to these questions must be sought before we applaud too vociferously the so-called run down of our mental hospitals.

¹ Department of Health and Social Security, *Psychiatric Hospitals and Units in England and Wales: Inpatient Statistics from the Mental Health Inquiry for the year 1969*, Statistical Report Series No. 12. London H.M.S.O., 1971 (92p net).

Cot Deaths

Slowly and through much skilful work information is growing on "cot deaths," though there is no certainty about their cause or causes and no recipe for their prevention. A notable contribution has now come in a further report by P. Froggatt and colleagues on a survey made in 1965-7 in Northern Ireland,¹ and it will help considerably in sorting out the more probable from the less probable hypotheses.

The incidence of sudden unexplained deaths was 2.5-3.0 per 1,000 live births. It was comparable to that in other surveys, a finding curiously consistent among all Europeanized communities in temperate zones. As in other surveys, the incidence was low in the first three weeks of life, rose, and then declined rapidly after three months. This pattern is fundamental, for it appears that, though known factors such as small birth weight and high room occupancy may slightly alter the risk, the main one is bound up with a change which takes time to develop after birth. Once again more deaths occurred in the six months November to April than in the other half-year. This distribution and the fact that these deaths increased at the times of two recorded outbreaks of influenza suggest strongly that infection may at least sometimes contribute to their cause. Yet attempts at isolating viruses and bacteria were unrewarding.² C. G. Ray and his colleagues³ showed in a similar study, a significantly high rate of virus isolations from respiratory and enteric sites, and they now report⁴ that no viraemia was detected in any of 20 cases examined and circulating interferon, which might be taken as an indicator of recent infection, was found in only 4 of 119 cases. In the Northern Ireland survey 79 of 148 cases had recently been discharged from hospital or had been under medical care or on recollection were thought to have been unwell in the last week compared

with 15 among a similar number of controls. The 69 who gave no history of indisposition are in conformity with R. G. Carpenter's findings in a study of twins:⁵ in 44 out of 112 cases of cot death neither the affected twin nor the surviving one was reported to be unwell. If infection plays a part it appears as a trivial affliction rather than as a frank one.

The survey included a greater number of families who had already lost one or even two children by cot death than seems likely by chance alone or than could be accounted for by inaccurate attribution. The team in Northern Ireland paid particular attention to possible genetic causes and found no evidence for a Mendelian interpretation. In their cases there was no parental consanguinity; the mothers had not suffered an excess number of miscarriages; and there was no evidence of amino-acid metabolic defects as judged by urinary chromatograms. Among the four, and possibly six, cases in which there had been unexplained deaths of sibs there was a history of previous "fainting," cyanotic or apoeic attacks, or periodic breathing. The authors suggest that such cases may have a different aetiology.

Despite the difficulty in determining the time of death there is no doubt that in the Northern Ireland survey as in others the time of highest risk is the night. Diurnal variation in metabolism may ultimately be found to influence the outcome. The more likely interpretation is that sleep somehow hinders the proper response to respiratory difficulty. Much research is now concerned with failing reflexes or inhibiting reflexes affecting respiration in infants, but sleep and inappropriate reflexes do not appear to explain the initial respiratory difficulty or collapse nor the characteristic age at death. One hypothesis is that the remarkable changes in heart tissue taking place with growth in infancy may take a false step and lead to cardiac failure.⁵ Anaphylaxis to milk or other, possibly microbial, antigens, perhaps because of functional deficiency of IgA in the baby, is still a likely mechanism.⁷ The immunological techniques now being used for its investigation were not available at the time of the Northern Ireland survey. They at least show that the conditions necessary for its action are present.⁸

From the practical point of view one important fact emerges from all studies: parents should not blame themselves for the deaths, and the public at large should learn neither to show nor to feel the cruel primitive rejection that some do. Though breast feeding does not guarantee safety—two babies in the Northern Ireland series were breast-fed throughout their lives—it must be regarded as the most effective prophylaxis, if continued for months, that a mother can take. IgA and other components in human milk (and not just in colostrum) are now known to have positive antiviral and antibacterial activity in the baby, and human milk is believed to be non-allergenic to man. If death comes from failure to cope with respiratory difficulty, it seems sensible to put a baby to sleep on his side or back rather than face down, when the weight of the trunk, and not merely that of the ribs and abdominal wall, have to be lifted at every breath.

The special group of babies who have apnoeic or cyanotic attacks are a worry to their doctors and their parents. How far resuscitation methods should be in the minds of mothers with normal babies or babies subject to such attacks is hard to say. Disproportionate fear could bring disproportionate use. It is doubtful whether a monitoring mattress (price about £50) would help, but there are near-misses in cot