

implications for developed countries as well as for the under-developed or developing ones, as is clear from the existence of the two-tier nursing structure in Britain and the dental nurse in New Zealand.

Governments are concerning themselves more and more with health programmes in their entirety, from the training of doctors to malaria eradication or smallpox vaccination. Medical care is closely linked with national welfare and social and economic progress, for no nation can afford an unlimited health budget. In the worst-placed countries the dependence of health on economic progress and the dependence of economic progress on health form a circle the breaking of which requires a major effort of self or outside help. A crucial and urgent factor here is population control, and the conference stressed that the medical profession would disregard its duties and responsibilities in this field at its own and the world's peril. It was also clear that failure to provide medical care for all the population of the world today was partly a failure of application. If money and manpower were available to make use of the facts now known to medical science many of the problems of the backward peoples of the world could be solved almost overnight. There was also a failure in society itself, a failure to accept modern medicine and health measures by the very peoples most needing them. This is a barrier which only education can remove. So once more there is the paradox that economic improvement is necessary for health and health for economic improvement.

Cigarette Smoking and Heart Disease

Many studies have provided sound evidence of a relationship between cigarette smoking and arteriosclerotic heart disease. And the latest reports of some of the main studies still in progress increase the evidence in support of the association.

The prospective studies by E. C. Hammond¹ among a million American men and women, by H. F. Dorn² and later by H. A. Kahn³ among 300,000 American men who hold life-insurance policies, and by R. Doll and Sir Austin Bradford Hill⁴ among 34,000 British physicians all indicate that male cigarette smokers are about 1.5 and 2.0 times more likely to die of arteriosclerotic heart disease than non-smokers. A recent report from the long-term prospective study of 4,120 initially healthy men in Albany and Framingham, U.S.A.,⁵ in which morbidity is studied as well as mortality, indicates that both fatal and non-fatal myocardial infarction is about 2.5 times more frequent among cigarette smokers than non-smokers. Though all these mortality ratios are small, arteriosclerotic heart disease is so common that it causes many more of the excess deaths among cigarette smokers than do other diseases, including lung cancer, which show far higher mortality ratios.

Most studies indicate that the relationship between arteriosclerotic heart disease and smoking is greatest in young men. Thus Doll and Hill found that the mortality ratio of cigarette smokers to non-smokers fell from 5.5 to 1 for men aged 35-44 down to 1 to 1 for men aged 75 or more. Both Kahn and Hammond found a similar relationship, and

The steps towards the goals of such thinking were in general very timid, and in some cases scarcely practical, but of more concern was the fact that the ideas being expressed at the conference were clearly wider in implication for many participants than the rigid limits of the horizons of their own small worlds would allow them to accept, so that often the discussion would be turned away from a concept of major future importance to the dissection in intimate detail of a current problem of local concern to a few delegates. This was unfortunate but perhaps inevitable in the context of a seminar group of eighty or more and a small discussion group of over twenty. More difficult to pin down but equally disruptive were semantic differences—differences not of language but of the meanings applied by different delegates to the words they used—community medicine, medical assistant, social medicine, paramedical are good examples. Dr. John Ellis, in his closing address, recommended that a standard glossary of such terms should be provided for the future, and this seems essential.

In his inaugural address President Radhakrishnan of India expressed the ideal that "Every human being in every part of the world is entitled to have the advantage of the miracles of modern medicine and surgery." The message of the Third World Conference on Medical Education was that if this ideal is ever to be realized, the medical profession must turn its gaze outwards and study the world's needs more than it does at present.

further evidence comes from a recent retrospective survey in Dublin.⁶

There is a clear relationship between arteriosclerotic heart disease and amount smoked, the risk for a heavy smoker aged 45-54 being about 75% higher than that for a light smoker of the same age. None of the studies provides much information about younger men, but such as there is suggests that among smokers aged 35-44, heavy smokers have about three times the death rate from arteriosclerotic heart disease as light smokers.

Information on the effect of inhaling is scanty and unreliable. Doll and Hill found a higher mortality among inhalers than non-inhalers, but the difference was small and not statistically significant. Hammond also found a slightly, but consistently higher mortality among inhalers, and a retrospective study by D. Schwartz and colleagues⁷ showed a highly significant excess of inhalers among patients with myocardial infarction in comparison with a series of matched controls.

Doll and Hill, Hammond, and Kahn are unanimous about the effect of stopping smoking on the risk of subsequent death from arteriosclerotic heart disease. There is some irregularity in the mortality rates for subjects who have recently stopped smoking, probably because many people discontinue "on doctor's orders."⁸ Thereafter the mortality rate of ex-smokers decreases gradually with number of years since cessation, but even after many years does not quite attain the rate of non-smokers. The results of the Albany and Framingham study,⁵ however, suggest that the risk of myocardial infarction for smokers reverts to that of non-smokers very rapidly after cessation of smoking. Furthermore, in

this study the risk of myocardial infarction is unrelated to duration of smoking, and no relationship whatsoever has been found between smoking and angina pectoris. It has been suggested that these findings indicate that atherogenesis is unrelated to smoking, but a careful post-mortem study by O. Auerbach and colleagues⁹ provides strong evidence that atherosclerosis is considerably commoner among smokers than non-smokers. Whatever may be the explanation of this difference between the results of the Albany and Framingham study and the mortality studies, the evidence all suggests that it is beneficial to stop smoking.

Though the evidence discussed above relates specifically to the association between arteriosclerotic heart disease and smoking among men, Hammond's study² firmly establishes that the situation is much the same for women.

The epidemiological studies thus strongly suggest a causal relationship between cigarette smoking and arteriosclerotic heart disease,¹⁰ but the case would be greatly strengthened if the physiological or biochemical effects of smoking could be shown to contribute to some part of the disease process. The pharmacological actions of nicotine on the cardiovascular system are well documented,¹ but it is unknown whether these short-term effects are cumulatively harmful. After smoking there is a decrease in the normal post-prandial rise in serum triglycerides and an increase in the free fatty acids.^{11 12} This is apparently secondary to nicotinic stimulation of the sympathetic nervous system.¹³ Levels of serum cholesterol are unaltered after smoking, but most investigators have found smokers to have higher mean levels than non-smokers,^{14 15} though some have found no consistent relationship,^{16 17} especially among the very old and the very young.

Most observers report no effect of smoking on blood coagulation, though H. Engelberg found thrombosis formation time *in vitro* to decrease after smoking.¹⁸ J. F. Mustard and E. A. Murphy¹⁹ reported that smoking decreased the survival of blood platelets *in vivo*, and an increase in platelet stickiness has been demonstrated by P. Ashby and colleagues.²⁰

The mechanism by which tobacco could exert a deleterious effect on the coronary circulation is thus very incompletely understood. It is clear, however, that there are many possibilities, and the suggestion that cigarette smoking should be one of the causes of arteriosclerotic heart disease is far from unlikely biologically.

One Cost and Another

Covering the twelve months to last March, the latest hospital costing returns¹ reflect the wage and price increases of that period which eventually led to the freeze announced in July. For the regional boards the average weekly cost of maintaining an inpatient in acute hospitals went up by rather more than 10% (from £35 17s. 8d. to £39 11s. 11d.), compared with increases of 7% and 6% in the two previous years. For London's acute teaching hospitals the increase was slightly higher (11½%), the actual costs being £50 14s. 3d. in 1964-5 and £56 11s. 6d. last year. About four-fifths of the higher cost of maintenance is said to be due to rises in wages, salaries, and prices. The remaining fifth—say £1 3s. for the teaching hospitals and 14s. 6d. for the regional hospitals—should represent, therefore, an expansion of services—more staff, as well as higher paid staff; more investigations; new forms of treatment; perhaps, even, better food.

The average cost of treating a patient till he is discharged or dies, as distinct from the cost of maintaining him for a week, rose in the acute regional hospitals from £60 15s. 2d. to £65 14s. 9d. and in the London teaching hospitals from £103 5s. to £110 9s. 6d. It is customary for the cost of treating a patient to show a smaller percentage rise than the weekly cost of maintaining him. This is because over the years the hospitals have used their beds more efficiently. By reducing the average length of stay, and by keeping beds as fully occupied as possible, they have admitted more patients, with the result that the average cost of treating each has not risen in the same proportion as has hospital expenditure as a whole. Has the scope for this sort of efficiency now diminished? In the year ended last March the rise for the acute regional hospitals was just over 8%, whereas in the London teaching hospitals it was 7%, and it is significant that the former showed only a small decline in the average length of stay last year, from 11.9 days to 11.2. But this does not mean that the length of stay has reached its minimum. Three of the Metropolitan regions and the Liverpool region have an average length of stay of 13 to 14 days. Even if they cannot rival Oxford, which despite the highest weekly cost of all the regions has the lowest cost per case because its average length of stay is only 8.6 days, can they not bring their patients' stay down to nearer the present average? It is also worth noting that the Radcliffe Infirmary, Oxford's teaching hospital, has reduced its patients' stay from 8.1 days to 7.9, which compares with the London teaching hospitals' average of 13.7.

In a comment in these columns² on the hospital costing returns for 1964-5 the question was raised whether the takeover of Lambeth and Dulwich Hospitals by St. Thomas's and King's would affect their costs. The new returns show that the weekly inpatient cost has gone up by 16.2% for Lambeth and 21.3% for Dulwich—to £38 6s. 7d. and £41 7s. 5d. respectively. This increase is far higher than the average and compares with one of 8.7% for the South-east Metropolitan Region, in which these hospitals were previously included. When examined, the increase for both hospitals is explained by much heavier costs for nursing and domestic staff than they incurred before they became part of teaching hospitals. Dulwich Hospital's costs under these two heads combined went up by over 30% and Lambeth's by 14.2%.

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