particularly if he is no longer economically useful, to feel loved and wanted. There is much concern about the welfare of old people, but the very fact that their position is receiving such detailed scrutiny indicates that their social status is changing. In their ever-increasing numbers old people are becoming a social problem, and the fear is expressed that they may be becoming a social burden. Old people seem more often now to be falling outside family units. The attitude of our society as a whole seems to be ambivalent. There is a tendency, for example, towards segregating old people—a tendency which is not wholly explicable in terms of the housing shortage; and, while the importance to the old person of continued employment for as long as possible is stressed, arbitrary and traditional ages of retirement are maintained and even embodied in new legislation.

Though, judged by crude material standards (such as their financial state or their housing situation), the old people in this series of cases were in general not badly off, there was evidence that they were subject to environmental stresses, particularly to community attitudes expressed in the behaviour towards themselves of their own relatives, which, though more subtle, were not less wounding. Most of these old people were also temperamentally vulnerable. Many gave a family history or previous personal history of nervous or mental illness; many had suffered the disabilities of a broken home in childhood; and most of them had defects of personality which had made them prone to reactions of anxiety and insecurity, and to social isolation with its attendant feelings of loneliness. It seems that when a depressive illness develops in such a predisposed individual—particularly when resistance, already lowered by the effects of old age, is still further impaired by physical ill-health, and there is a lack of love due to the loss of a marital partner or rejection by offspring—a reaction of weariness, loneliness, and despair may be set in motion which tends to eventuate in suicide. This is a generalized statement; but it is doubtful if we have at present enough evidence to be more specific. Each case differs in certain respects; predisposing and precipitating factors vary in the relative intensities of their incidence, and much in every case remains unknown.

It is evident from the above that the known factors which tend to precipitate suicide in old people are the same factors which in general tend to precipitate their mental breakdown. The prophylaxis of suicide in this age group coincides, therefore, with the wider objectives of a programme of mental hygiene, about which fortunately there is now wide theoretical agreement. The promotion of optimum mental health in earlier years; the encouragement of continued occupation for as long as possible and the fostering of other interests; the maintenance of social integration; the avoidance of undue fatigue; the early and adequate treatment of physical illness and the alleviation of fears about it; the prompt diagnosis and treatment of mental illness, and particularly of depressive reactions; the recognition of the warning in the suicidal talk of the old person: all these items and objectives are of the greatest importance, and in their pursuance a great many agencies and individuals have their parts to play. The problem is far wider than merely a medical one. Suicide is a disease of the community, and the community as a whole has to exert many resources in its self-healing.

Summary

In a series of 200 consecutive cases of attempted suicide admitted to a general hospital 40 were aged 60 years or over. Detailed social and psychiatric data about these 40 cases are presented.

A family history of psychiatric abnormality was obtained in 65% and of suicide in 17% of the cases.

One-half of the group came from "broken homes." More than one-half had previously been mentally ill. Previous suicidal attempts had been made by 17%. Three-quarters had vulnerable personalities, which tended to isolate them socially.

Of the suicidal attempts 80% occurred in the setting of a depressive state. Evidence suggested that the recurrence of a depressive illness in old age had been less well tolerated than earlier attacks, and that the suicidal attempt of an old person is almost always a genuine one. Less than one-quarter of the attempts had been impulsive.

Significant physical disease was present in 60% of the cases.

Attention is drawn to the multiplicity of precipitating factors and motives, and stress is laid on the importance of feelings of loneliness and physical incapacity, fear, and identification with a dead person.

Adverse social factors of a material kind were found to be less important than community attitudes, which tend to make the old person feel useless and unwanted.

The importance of the problem of suicide in old people is emphasized, and a relevant mental hygiene programme is outlined.

We are grateful to Professor Sir David K. Henderson for his criticism and advice, and to Dr. J. K. Slater for permission to study these cases in his wards of the Edinburgh Royal Infirmary.

REFERENCES

- Batchelor, I. R. C., and Napier, M. B. (1953). *Brit. J. Delinq.* 4, 99.
Cavan, R. S. (1928). *Suicide*. University of Chicago Press, Chicago.
Gruhle, H. (1941). *Altersforsch.* 3, 21.
Kaplan, O. J. (1945). *Editor of Mental Disorders in Later Life*. Stanford University Press, Stanford, California.
Kjorboe, E. (1951). *J. Gerontol.* 6, 233.
Roth, M., and Morrissey, J. D. (1952). *J. ment. Sci.* 98, 66.
Sainsbury, P. (1951). Quoted by A. Lewis in *Edinb. med. J.*, 58, 227.
Swinscow, D. (1951). *British Medical Journal*, 1, 1417.

WORK AND AGE: STATISTICAL CONSIDERATIONS*

BY

W. P. D. LOGAN, M.D., Ph.D.

Chief Medical Statistician, General Register Office

I propose to deal with four basic considerations regarding the elderly worker: (1) the relative numbers of old and young people in the population; (2) the proportions of old people still at work; (3) the relative mortality risks to old people in various broad types of employment; and (4) the amount of time lost on account of sickness.

Population

It is no longer news to any audience to announce that the proportion of young people in the population of this country is becoming smaller and that the proportion of elderly people is increasing. This situation, which is occurring in most Western countries as well as our own, is the result of a prolonged decline in the birth rate from about 1870 until about 10 years ago, accompanied by a reduction in mortality that began a few years earlier and which is still continuing. The outcome has been an age redistribution of the population, and Fig. 1 shows the changes that have occurred during the past 110 years and also what the situation is likely to be in 1991, as estimated on the basis of some simple and reasonable assumptions about trends of births and deaths during the next few decades. The proportion of the population of working ages, taking these as 15 to 64 years, has increased during the past century, and by 1951 there were 67 people of working age to every 33 people outside this age range—that is, two-thirds of the population in 1951 were aged 15–64. Unfortunately, the ratio of persons

*Read in opening a discussion in the Section of Occupational Health at the Annual Meeting of the British Medical Association, Cardiff, 1953.

FIG. 1.—Percentage age distribution of the population (male and female) of England and Wales, past, present, and future.

FIG. 2.—Death rates per 1,000 males in age groups, England and Wales, 1841-5 and 1946-51.

of working age to other ages is now just about its maximum, and by 1991 we shall be back to where we were in 1901. There will, however, be one very important change: a hundred years ago there were about eight children to every old person and at present there are about two children to each old person, but by 1991 there are going to be almost as many people aged 65 and over as under 15.

Now, although one of the main factors responsible for these changes has been improving mortality, the degree of improvement has been very different at different ages, as Fig. 2 indicates. During childhood and young adult life death rates have declined by 80% to 90% in the past 100 years, whereas at old ages the decline in mortality has been less than 20%. The effect of this differential improvement can perhaps best be illustrated by means of "expectations of life"—namely, the average number of years that people of a given age will live if subject to given mortality conditions. For a newborn boy in 1841 expectation of life was 40 years (Fig. 3) and by 1950 it had risen to 66 years—that is, an increase of 26 years. For girls the increase was even greater—namely, 29 years. For boys aged 15 years the expectation increased from 43 years in 1841 to 55 years in 1950. I mentioned, however, that improvement in mortality

has been greater at younger than at older ages, and the effect of this is seen in the changing expectation of life of people aged 60. In 1841 this was 14 years both for men and for women, but by 1950 it had increased for men only to 15 years and for women to 18 years. This is rather an important point: although expectation of life at birth has increased 20 or 30 years this does not mean that people approaching retirement nowadays have 20 or 30 more years of life before them than their grandfathers, or perhaps great-grandfathers, had. In fact, they will on average live only a year or two longer.

None the less there has been some increase, and in showing that the changes at older ages in mortality, and therefore in expectation of life, are small compared with younger ages I do not want to give the impression that the age structure of the population over the age of 60 has been quite static, though indeed it was so for a long time. Fig. 4 gives the proportions of men at various ages over 60 years in four different years. In 1841 and 1901, men aged 60-64 outnumbered those over 75 by more than 2 to 1; in 1951 the ratio was 3 to 2; and by 1991, if recent mortality trends continue, there will be as many men alive aged 75 and over as aged 60-64.

FIG. 3.—Expectation of life in England and Wales at various ages and at three periods of time.

FIG. 4.—Percentage age distribution of male population of England and Wales, aged 60 and over.

Occupation

I turn now to my second topic, the occupational distribution of the elderly population as determined by the 1% sample analysis of the 1951 census returns. Fig. 5 shows the proportions of elderly men describing themselves as occupied or unoccupied. At ages 60-64 87% were still working full-time and 10% were retired. At ages 65-69 the proportions of these two categories were practically equal—48% still working whole-time and 47% retired. In the next age group, 70 and over, 20% were working whole-time, and 70% were retired.

Fig. 6 shows the status distribution of men still occupied at ages 60 and over. At ages 60-64 operatives constituted 78% of the total, and men working on their own account 9%. By ages 70 and over the percentage of operatives had fallen to 64, with a corresponding increase in the categories of employers, managers, and those working on their own account. People in these latter occupations carry on working after many of the men classed as operatives have stopped.

FIG. 5.—Percentage distribution of men aged 60 and over according to whether occupied or retired. Great Britain, 1951 census, 1% sample.

FIG. 6.—Status distribution of occupied men aged 60 and over. Great Britain, 1951 census, 1% sample.

FIG. 7.—Percentage of men aged 70 and over, retired from selected occupations. Great Britain, 1951 census, 1% sample.

Fig. 7 lists a number of large occupational groups and shows the percentage of men aged 70 and over described as retired, expressed as a percentage of the total number of men at these ages in those occupations. The lowest proportion of retirements was for agricultural workers, 59% retired, followed by directors and managers, of whom 63% were retired. Occupations in which high proportions were retired were rail transport workers (96% retired), fishermen (94%), mining and quarrying (92%), and teachers (91%).

Occupational Mortality

Since 1851 it has been the custom of the Registrar-General to calculate occupational mortality rates for years in or around that in which there was a census, and in due course an occupational mortality analysis for years 1949-53 will be made upon the basis of the 1951 census. A preliminary analysis has just been completed for the year 1950, utilizing the census 1% sample occupational data, and Table I shows some of the results that have emerged. For men aged

TABLE I.—Death Rates of men Aged 60-64 in Selected Occupations Per Cent. of Corresponding Rate for All Men. England and Wales, 1950

Social Class	Occupation	Death Rate
II	Farmers	69%
	Hewers and getters	187%
	Other mine-workers	139%
III	Transport workers	108%
	Clerical workers	98%
	Armed forces	171%
IV	Agricultural workers	74%
	Mine-workers	101%
V	Building labourers	70%
	Dock labourers	128%

60-64 mortality was notably low for farmers, for other agricultural workers, and for building labourers, all with death rates less than three-quarters of the average for all men of that age group. Mine-workers in social class III—that is, skilled workers—had an unfavourable mortality experience, particularly hewers and getters, and another occupational group with a high death rate at ages 60-64 were men described as members of the armed Forces.

Incapacity Amongst Elderly Men

One of the important factors to be taken into consideration in determining whether an elderly man is still employable is the amount of time he is liable to lose from work on account of sickness. Some information on this question can be obtained from the results of the monthly Survey of

Sickness conducted in England and Wales from 1944 to 1951. For the purposes of this survey, incapacity was defined as inability on account of sickness to go out to work or, for persons not at work, inability to go out of doors. It is important to note this dual definition of incapacity, because it is a little difficult to interpret the figures for elderly men, many of whom do not go to work and to whom the second half of the incapacity definition applies. Since a retired man may be well enough to go out of doors but might not, had he been still working, been well enough to go to work, the incapacity rates revealed by the survey are not quite comparable from age to age. None the less they are worth looking at and thinking about.

In an average month of 1950 the percentage distributions of men aged 16-64 and men aged 65 and over according to their reported days of incapacity compared as shown in Table II.

TABLE II

Days of Incapacity	Ages 16-64			Ages 65+		
0	..	..	91.3	..	..	89.1
1-3	..	..	2.7	..	..	1.7
4-10	..	..	2.8	..	..	3.4
11 and over	..	..	3.2	..	..	5.8

It is surprising how little difference there is between the two groups; almost 9% of men of working ages had some incapacity in the month, and for elderly men the proportion increased only to 11%. It was mainly in the group with incapacity of more than 10 days that the elderly men were in excess, their proportion (5.8%) being nearly double that for younger men. This predisposition of the elderly group towards more prolonged incapacity resulted in their having a quite definitely higher average incapacity rate than younger men—namely, 1.6 days per man per month, compared with 0.9 day for men aged 16-64. However, it must not be supposed that suddenly at age 65 the incapacity rate jumps from the lower to the higher level. The increase is gradual and continuous from about 35 years of age upwards, and indeed the figures suggest an actual falling off after 65.

TABLE III

Age:	16-	25-	35-	45-	55-	65-	75+
Days of incapacity per man per month	0.69	0.69	0.79	1.02	1.61	1.57	1.58

By reason of the special definition of incapacity already referred to, applying to people who do not go to work, the flattening off of the rising trend of incapacity rates after age 65 is probably fallacious, and no doubt the curve in fact keeps rising. I do not want to enter into a detailed discussion of these incapacity figures, and I shall merely emphasize the two points which they bring out—namely, that the proportion of elderly men who do *not* have any incapacity is almost as great as for younger men, and also that there is no evidence of a sudden increase in incapacity amongst the higher age groups, but a gradual increase throughout adult life.

These figures support in a general way the thesis which is being increasingly put forward nowadays, that there is no justification for an arbitrary and rigid retirement policy applied to everyone at, say, age 60 or 65 years, or indeed at any age, on the grounds that beyond that age service will be so punctuated by incapacity as to make it unprofitable for it to continue. Though this is no doubt true for certain occupations that impose a heavy physical or mental burden upon the elderly and impair their health, it is not the case for the majority of occupations, and, provided an elderly man can be relieved of some of the load he has previously carried, there seems every reason for him to keep on working until his own individual state of health renders it expedient that he should stop. The important thing, however, is that he be relieved of his load, and in some cases this may be achieved only by change of occupation. There is indeed much to be said for every man taking stock of his

position when he is approaching the sixties and considering how long he will be physically and mentally able to carry on with his present job, and whether he wants to carry on any longer.

The man who carries on with his customary work after 60 may find himself unable to cope with it a few years later, and he may also find that he has lost the ability and inclination to turn to anything new; but the man who breaks away at 60 and takes on a lighter job, particularly if it is one in which he can find some personal interest, may find that he has embarked upon a second career in which he can continue to give useful and satisfying service for a further 10 years or more. Though we may all have some kind of humanitarian urge to relieve elderly people of the burden of having to keep on working for their living and to allow them the rest that they deserve, it has to be realized that to remove compulsorily from work an elderly man who is fit and eager to carry on doing something is not an act of kindness to that man. The suicide rate is high amongst elderly people. It might not be so high if more of them were given the opportunity of continuing to be useful, productive members of the community.

EXTENDING THE EMPLOYMENT OF OLDER PEOPLE*

BY

A. T. WELFORD, M.A.

(From the Nuffield Research Unit into Problems of Ageing, Psychological Laboratory, Cambridge)

It is perhaps presumptuous for a psychologist, especially an academic psychologist, to speak about the employment of older people, since industry and industrial medicine have had to deal with this problem in a practical way for many years, and have managed to solve it with very fair success in a number of cases. I hasten to say, therefore, that I speak with a very real sense of humility and that my remarks should be taken as suggestions for consideration rather than as confident assertions.

It is well known that the average age of the population has been increasing during recent years. From 1851 to 1921 the proportion of people over 65 was nearly stable at about 10% of those between 20 and 64, but in the 1951 census the proportion had risen to 18%, and it has been estimated that by 1961 it will be 22%, and by 1971, 28%. In other words, whereas up to the years immediately following the first world war there were about 10 people between 20 and 40 for every one over 65, there are now fewer than six, and 20 years hence there will be fewer than four. If present retirement ages continue there is likely to be a serious shortage of labour before long. Realization of this has led to questions being raised in many quarters whether employment and retirement policies for older people, built up in the early years of the century and in the slump conditions of the 'thirties, are adequate for conditions to-day. Even if they are, it is urged that some measures should be taken now to forestall future difficulties.

The problems of employing older people involve several disciplines. Some are medical. Some are economic, concerned with pensions schemes and pay

*Read in opening a discussion in the Section of Occupational Health at the Annual Meeting of the British Medical Association, Cardiff, 1953.