UNIVERSITY of GLASGOW

M.D. Thesis.

EPIDEMIOLOGICAL ASPECTS OF CIRCULATORY DISEASE IN SCOTLAND.

by

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Volume I. TEXT.

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V.T.H/A.T.

The Clerk of the Faculty of Medicine,
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2 October, 1970.

Dear Sir,

Epidemiological Aspects of Circulatory Disease in Scotland.

Dr. Gillis has contributed exclusively to the major part of the work presented in his thesis - particularly in the sections dealing with standardised mortality rates and the development of tests of transient cerebral ischaemia. The nature of the screening programme required the participation of others, but Dr. Gillis' contribution to the conception and execution of this part of the study is identifiable as personal and independent as are the deductions and conclusions upon which he bases his thesis.

Yours faithfully,

V.T. Hawthorne

V.T. Hawthorne, M.D.

Epidemiological Aspects of Circulatory Disease in Scotland.

C. R. Gillis. M.D. Thesis.

SUMMARY.

Introductory Passages.

Epidemiology is defined as the medicine of populations rather than individuals. The thesis deals with the pattern of mortality from cerebrovascular disease in Scotland, England and Wales; the investigation of some possibilities in screening for symptoms of cerebrovascular disease; and a study of blood pressure on the Hebridean Island of Tiree.

Chapter I. A Short History of Epidemiology.

Epidemiology has developed since Biblical times as the study of the 'mass phenomena of disease'. The introduction by Galen of a system of medical thought based on theory rather than observation delayed the development of epidemiology for at least 15 centuries. However, by the 16th and 17th centuries sound ideas on the behaviour of communicable diseases were in existence. Systems for data collection developed in parallel and with this the science of bio-statistics. The discovery of the bacterium gave epidemiologists a pivot for their theories and was responsible, in part, for the concentration of epidemiology on communicable disease. The decline in infectious diseases and the consequent increase in chronic diseases in the earlier part of this century resulted in the modern emphasis of epidemiological thought on non-communicable disease.

Chapter II. The Nature of Mortality Data for Cerebrovascular Disease.

As approximately fifty per cent of deaths from

cerebrovascular disease take place at home and grouped data show that hospital clinicians have difficulty in distinguishing between cerebral haemorrhage and infarction, death certificate data for these categories of disease are likely to be unreliable. While this finding is supported from the literature, factors which enhance the validity of death certificates for cerebrovascular disease are discussed and evidence produced indicating ways in which such data may be considered of greater consequence.

Chapter III. The Pattern of Mortality from Cerebrovascular Disease and Arteriosclerotic and Degenerative Heart Disease in Scotland, England and Wales (1947-1966).

The crude and direct standardised mortality rates for males and females by five year age groups for cerebrovascular disease (I.S.C. 330-334 and 330, 331, 332) and arteriosclerotic and degenerative heart disease (I.S.C. 420-422) are tabulated for the period 1947-1966 and the data of greatest interest presented in graphical form. Attention is drawn to the apparent recent lack of increase in mortality for cerebral infarction which is in marked contrast to the rise in rates for myocardial infarction especially in the population aged 50-64 years. The relationship of the two conditions is brought into question.

Chapter IV. Bridge Passage.

Investigations into the epidemiology of cerebrovascular disease require large resources of manpower. Attempts at collecting data on morbidity and mortality from cerebrovascular disease require co-operation from those who supply such data. As neither manpower nor co-operation were freely available, an invitation to join a cardio-respiratory screening unit and continue the investiation of the epidemiology of cerebrovascular disease using the facilities of the unit was accepted.

Chapter V. The Introduction of a Questionary on Screening for Symptoms of Transient Cerebral Ischaemia.

The cardio-respiratory screening unit and its method of operation is described. A simple questionary on loss of power in the upper and lower limbs and on loss of speech and consciousness is evolved, tested and considered suitable for interviewer-administration under the conditions of a screening survey.

Chapter VI. An Account of the Administration of the Questionary on Symptoms of Transient Cerebral Ischaemia in Three Samples of the Scottish Population - Clackmannan, Glasgow and Tiree.

Individuals who have experienced one or more of the symptoms sought by the questionary have greater experience of symptoms of angina, infarction and claudication and also more signs of electrocardiographic abnormalities as well as greater experience of cigarette smoking than those who have not admitted to such symptoms. If the high prevalence of these symptoms is substantiated this may partially account for the lack of increase in rates for cerebral infarction and the rise in rates for myocardial infarction mentioned in Chapter III. This project is presently being followed-up by a case/control study and a record linkage procedure.

Chapter VII. Blood Pressure in a Scottish Island Community.

A study of mean blood pressure levels in age-and-sex-matched samples of the population of the Hebridean Island of Tiree appears to support the local belief that blood pressure is higher on the island than on the mainland. This conclusion may be related to the observation of a greater mean width of the heart measured radiologically in the island population compared with the mainland population.

Chapter VIII. The Paradox of Tiree.

The Islanders of Tiree appear to have a greater

experience of clinical signs of vascular disease while admitting to fewer symptoms than their mainland contemporaries. While mean blood pressure levels are generally higher for those with symptoms and signs of vascular disease than for those without, they occur at higher mean levels of blood pressure in the island population compared to the mainland. Those without symptoms or signs can have higher blood pressure on the island than those with symptoms on the mainland. The hypothesis that island life may protect the individual from the effects of raised blood pressure is explored but not proven.

Chapter IX Summary.

The author aplogises for the anomalies in the disposition of brackets around figure and table numbers which appear in various parts of the Text. This occurred during final typing at a stage where the thesis could not be retyped.

C O N T E N T S.

INTRODUCTORY PASSAGES

FIRST

This thesis studies several epidemiological aspects of diseases of the cardiovascular system. It would be elegant to declare that a start is made with one idea and followed through from hypothesis to proof. Rather, the reader is invited to travel a path created by circumstance and opportunity - a series of epidemiological stepping stones laid down by five years experience of research and teaching in the Department of Epidemiology and Preventive Medicine in the University of Glasgow.

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INTRODUCTORY PASSAGES

SECOND

The modern study of epidemiology encompasses both communicable and non-communicable disease and is defined entomologically as the study (logos) upon (epi) people (demos). This imparts the meaning of the discipline to modern medicine as concerning itself with the study of populations rather than individuals. Thus epidemiology seeks to study the frequency of occurrence, course and outcome of the various categorising factors or characteristics of populations. The word characteristic refers to any attribute of a population as might be exemplified by its experience of health and disease, socio-economic status, eye colour or blood-lipid levels.

The purpose of undertaking such study is to increase knowledge by attempting to derive associations between diseases and characteristics so as to determine the nature of these associations in biologically meaningful terms with the ultimate aim of providing a basis for measures to prevent or otherwise alter the outcome of disease processes.

* * *

INTRODUCTORY PASSAGES

THIRD

This thesis deals with three topics. First, the pattern of mortality from cerebrovascular disease in Scotland, England and Wales. Second, an investigation of some possibilities in screening for symptoms of cerebrovascular disease; this second topic being an integral part of the third topic - a study using multiphasic screening methods of blood pressure levels in a Scottish island community.

The wider aspects of the research under discussion necessitate a short review of the history of epidemiology as a background to the thesis.

* * *

C H A P T E R I.

A Short History of Epidemiology.

The thing that hath been, it is that
which shall be:
and that which is done is that which
shall be done:
and there is no new thing under the sun. Ecclesiastes i.8.

The history of epidemiology begins long before the word itself had a recognised meaning in medicine. Winslow in his book 'The Conquest of Epidemic Disease' deals with the evolution of the ideas which led to the control of certain epidemic diseases and indicates that the transition from the pure mysticism of the Jews and the Chaldean and Babylonian astrologists to the explanation of disease in more natural terms, as in the writings of Hippocrates, marks the beginning of epidemiology (Winslow, 1943).

It is difficult to find better expression of this shift of opinion than in Hippocrates' discourse on 'Airs, Waters and Places'. Despite the view of classical philologists that Hippocrates is 'a name without writings' and probably represents the work of a number of writers as evidenced by the findings in the library of the School at Cos, this summarises in a remarkably timeless way the credo of epidemiology.

It was a product of the logic of the age and was also an example of the effect of bringing to bear the sum of knowledge on ideas that were considered relevant only to medicine.

The following extract is reproduced from the Adams translation of 1886.

"Whoever wishes to investigate medicine properly should proceed thus: in the first place to consider the seasons of the year, and what effects each of them produces. Then the winds, the hot and the cold, especially such as are common to all countries and then such as are peculiar to each locality. In the same manner, when one comes into a city to which he is a stranger he should consider its situation, how it lies as to the winds and the rising of the sun; for the influence is not the same whether it lies to the north or to the south, to the rising or to the setting sun. One should consider most attentively the waters which the inhabitants use, whether they be marshy and soft, or hard and running from elevated and rocky situations, then if saltish and unfit for cooking; and the ground, whether it be naked and deficient in water, or wooded and well-watered, and whether it lies in a hollow, confined

situation or is elevated and cold; and the mode in which the inhabitants live, and what are their pursuits, whether they are fond of drinking and eating to excess and given to indolence, or are fond of exercise and labour."

Greenwood (1935) provides us with a summary of what was known as shown by application of the Hippocratic method of determining the cause of disease.

"1. It was definitely ascertained that epidemics of catarrhal disease and of pulmonary disease are commoner in spring.

2. It was proved that spells of warm moist weather are very unhealthy and that in such weather pestilence is rife.

3. It was known that at the autumnal equinox diseases again became prevalent."

Hippocrates died in 376 B.C. and it was not till A.D. 131, during the lifetime of Galen of Pergamos that anything further was contributed to epidemiology. It was unfortunate not just for epidemiology but for medicine as a whole that Galen was more interested in proposing a theory of causation of disease based on ideas rather than observations. This was the age when theoreticians were able to propose and win acceptance of ideas that were not based on firm evidence - a

similar position to that adopted by some present-day mathematicians who look with contempt at the imperfections of biological data and are interested only in dealing with the abstract and the unreal. Galen's theory of causation of disease was based on the idea of three sets of circumstances interacting to produce either health or disease. These 'constitutions' or 'temperaments' as they come to be known were, the quality of the organic action of the body, the living habits of the individual, and the climate.

Each of these depended on the proper blending of four elementary qualities - hot, cold, moist and dry. Galen considered these four elementary qualities in organic terms as being blood, phlegm, black bile and yellow bile and proposed that when harmoniously blended health resulted, and that when one or more factors were out of balance, disease resulted. In other words a series ofarbitrary rules were created as the explanation of the causation of disease. These views expressed in a variety of forms dominated medicine for fifteen centuries and it makes one curious as to what would have happened to the progress of epidemiology through the ages if Galen had used his superb skill gained from his experience of anatomical and

physiological investigation to apply the Hippocratic method of deduction from observation to the accumulated medical knowledge of his period.

According to Garrison (1929) the first epidemiologist of modern years was Guillaume de Baillou (1588-1616). In Britain Thomas Linacre, the first President of the Royal College of Physicians of London, by translating the more important of Galen's work into Latin made the assumptions contained therein apparent to some of the medical scholars of his era such as Kaye, Caius, Fracastori, Thevart and Sydenham. Thomas Sydenham (1624-1689) is probably the best known of Linacre's contemporaries in this country. His contribution to the progress of epidemiology lay in his appreciation of the need for a system of thought that would bring order to epidemiological phenomena. He did this largely without reference to any statistical data or giving numerical expression to his observations. It is of interest that the influence of Sydenham and his school on contemporary thought was such that comment on environmental phenomena occurring during the course of an epidemic became a matter for comment in the diaries of Pepys, Evelyn and Swift (Garrison, 1929).

The introduction of methodology for collecting data

concerning the experience of the population of health and disease came towards the end of the sixteenth century during the reign of Henry VIII. An order was issued that all parish clergy should maintain a register of the individuals they christened, married and buried. This order was repeated by Queen Elizabeth I and was complied with in many parishes although at the time no one thought of examining these records with a view to drawing epidemiological conclusions from them.

The prevalence of the Great Plague at intervals during the sixteenth century was probably responsible for the introduction of the 'Bills of Mortality' which were kept regularly from 1563 onwards. At first deaths from plague and 'all other causes' were recorded, then in 1629, the reporting of death by sex and general category of disease other than plague took place. It was not till 1727 that age was recorded.

These Bills of Mortality were subject to the same sort of criticism as death certificates are today - that they were in the main completed by individuals who did not have the means to ascertain that what they were certifying was in fact correct and few paid any attention to them.

The year 1622 was a momentous one for epidemiology because it saw the publication of John Graunt's 'Natural and

Political Observations ... upon the Bills of Mortality. This is recognised as being the first serious attempt at using mortality data to relate variables such as age, sex and place of occurrence to the pattern of disease in the community. Graunt was the first to demonstrate the high mortality rate associated with infancy, the higher mortality rate prevalent in rural compared to urban districts and it was his work together with that of his colleague William Petty that led to the development of the modern life-table by Edmund Halley, his successor.

Thus by the end of the seventeenth century the idea of observing the natural history of disease in the community was in existence and a facility for data collection was in use though few of the medical profession thought either of particular relevance to medicine.

Greenwood (1935) comments that only two medical contributions during the eighteenth century attached any epidemiological importance to the opportunity for research presented by Graunt. One was a second publication of Graunt's book with a review of the data collected up until 1752. The other, Dr. Thomas Short's 'New Observations' which attempted to

define arithmetically, the difference between areas known to contain healthy and unhealthy people, the influence of the soil of an area on the diseases prevalent within it and the possibilities of epidemic diseases exhibiting the phenomenon of periodicity. Nevertheless by 1798 Thomas Robert Malthus had written his celebrated essay on the 'Principle of Population' which maintained that food supply and birth rate increase arithmetically and geometrically respectively so that poverty is the natural consequence of increased population. Moreover the eighteenth century saw the beginning of an increase in knowledge of the behaviour of communicable disease. This accrued more from the study of the Bills of Mortality by such pioneer epidemiologists as Percival, Ferriar, Aikin, Clark and Heysham than from any advance in clinical medicine. Creighton gives them the further credit of being almost the only physicians of their time to follow the course of these diseases out into the community of the poor (Creighton, 1891.)

It is perhaps appropriate to give special mention to a Scottish pioneer epidemiologist, Sir John Pringle (1707-82), a graduate of the Universities of St. Andrews, Edinburgh and Leyden whose significant contribution to epidemiological thought

was his use of what is now considered to be epidemiological methodology to distinguish between the syndromes of malaria and dysentery, this he achieved while acting as physician to the Earl of Stair, Commander of the British Army in Flanders.

The other, more celebrated, Scottish pioneer of the period was a contributor to preventive medicine, infectious diseases, and materia medica as well as to epidemiological thought. This was James Lind (1716-1794) whose celebrated 'Treatise on the Scurvy' apart from its contribution to the treatment of scurvy, could be said to lay the foundation, at least in principle, for the idea of the clinical trial.

The nineteenth century saw the beginning of the development of many of the ideas and methods that were to make epidemiology a recognisable speciality in the field of medicine. Paradoxically one of the most important figures in this movement, Edwin Chadwick, (1800-1890), was not a doctor but a lawyer. His essay published in the Westminster Review of 1828 on the 'Means of Insurance against the Casualties of Sickness, Decrepitude and Mortality' in which he concluded that life span increases with living standards, is considered by Walker (1930)

to be the foundation of the science of public health. Chadwick was essentially a statistician and administrator and, as Secretary of the Poor Law Commissioners, was responsible for the report on the 'Sanitary Conditions of the Labouring Classes'of Great Britain' which discussed the assocations between prevalence of illness and living conditions, poor ventilation and industrial disease, life span and social class, economic benefit and good hygiene, and the effects of preventive measures on improved health. The manner in which Chadwick gathered data and drew conclusions approximates to present-day methodology.

While Chadwick was laying the foundation for improving the social conditions of his time, a self-taught medical mathematician was making an equally important contribution to the field of Vital Statistics. His name was William Farr (1807-83) and his article in McCulloch's 'Account of the British Empire' under the title 'Vital Statistics' laid the foundation for that science. Singer (1925) in his 'Short History of Medicine' says that Farr was the first to attempt successfully the mathematical expression of the rise and fall of epidemic diseases. Farr was also the first to observe that the rise

in the number of cases of a disease during the course of an epidemic corresponded to the decline in the number of cases during its fall in equal periods of time. From this tendency to mathematical symmetry in the rise and fall of epidemic disease, Farr was able to predict the course of an outbreak of cattle-plague and this, together with his article on 'Vital Statistics', led to his appointment as Compiler of Abstracts in the new government department of the General Register Office. During his tenure of this post he developed a national system for the collection and abstraction of vital statistics which became a model for all countries able to implement Farr's methods. It was important for the advance of epidemiology that Sir John Simon, the first Medical Officer of Health for the City of London, was the type of man who was able to give Farr's ideas and methods the publicity and respect which Farr himself could not have achieved. Greenwood likens the relationship of Farr to Simon to that of Graunt to Petty (Greenwood, 1935). It is with no disrespect to either Petty or Simon that I quote Bulwer's phrase 'Genius does what it must and Talent does what it can.' It is the comparison of the composer and the

interpreter- which is the greater man? In the same way that the interpreter is the servant of the composer, so the administrator is the servant of the discipline for which he is responsible.

After William Farr, credit for incorporating more sophisticated mathematical procedures into the science of vital statistics is in the main due to Karl Pearson (1899), Yule (1937), Bradford Hill (1937), and Greenwood (1948) who, among others, brought into being the science of bio-statistics.

It is all too easy for the average epidemiologist to become so mesmerised by the technology (mathematical manipulations) of bio-statistics that he loses sight of his goal - the definition of causes of disease. One of the essential features of the epidemiologist is that he should understand the limitations of his data and there is little point in applying advanced statistical techniques to improperly collected or carelessly abstracted data or to data of doubtful validity. In biology there is little that is finite. This is what makes the relationship between epidemiology and bio-statistics such a challenging one to define. Benjamin Franklin's remark 'We shall hang together or most assuredly we shall all hang separately' is an appropriate conclusion.

John Everett Gordon, a former Professor of Epidemiology at Harvard, in a lecture on the 'Evolution of an Epidemiology of Health' (1953) declares that science advances both through factual knowledge and conceptual ideas and that regularly an important body of knowledge is ignored. As an example of this he cites Jacob Henle's paper 'On Miasmata and Contagia' available in English translation (Rosen, 1938). This paper constructed a theory based on facts gathered long before by other workers. Its contribution was the deduction that living microscopic organisms were the cause of contagious and infectious disease. Thus Henle is credited with laying the theoretical foundation for the science of bacteriology. The work of Pasteur (1822-95) defined unequivocably the nature of the origin of communicable diseases and was the most important contribution to the understanding of the epidemiological phenomena associated with infectious disease and made possible our present ability to defind the place of infectious disease in the spectrum of ill health that afflicts our society.

The work of Pasteur, and those who followed, would have had considerably less impact had it not been for the concurrent demonstration of techniques for the observation

of disease phenomena in populations and for drawing conclusions from them. Two British physicians, William Budd (1811-1880) and John Snow (1813-1858) were responsible for the two best known contributions to the field of study of communicable disease. Budd (reprinted 1931) had the opportunity to observe at first hand the behaviour of an outbreak of typhoid in his rural practice and using his specialised local knowledge was able to infer the mode of spread of the disease. John Snow was a general practitioner in London when cholera broke out in the Westminstdr area in 1854. Snow was able to implicate the celebrated Broad Street pump as being responsible for the spread of the epidemic. The tabulations he produced are models of their kind (Snow, reprinted 1936) and his ability to draw inferencesabout the behaviour of cholera from the data he collected from the homes of the patients he visited provides a brilliant example of epidemiological methodology. In fact McMahon, Pugh and Ipsen (1960) use some of Snow's figures and tabulations in their book 'Epidemiologic Methods' not as historical material but as actual examples for teaching and Terris (1965) has produced a deductive exercise for medical students using Snow's material.

Any reviewer of the development of epidemiology in the nineteenth century would do his subject a disservice if he did not include comment on August Hirsch's 'Handbook of Geographical and Historical Pathology' (1859). This has been made more accessible by Creighton whose translation into English was published in 1891. This is the best and most comprehensive treatise relating disease in humans to the interaction of insect, animal and plant life and of sociological and anthropological factors. The study of the environment of disease (communicable and non-communicable) was broadened to an extent never before attempted and even now has not been bettered. This study by Hirsch is considered by Gordon (1953 b.), to have introduced epidemiology.

The modern period of the history of epidemiology could be said to have begun when it was realised that infectious diseases no longer constituted the major causes of death in our society. It is difficult to put an exact date to this, however, Milton Terris, a pioneer of epidemiological teaching, quotes the year 1943 as signalling the change in the emphasis of epidemiological thought from communicable to non-communicable disease (Terris, 1962). The signal was the resignation of

John A. Ryle, Regius Professor of Physic at Cambridge to become Professor of Social Medicine at Oxford. It was Ryle's overriding concern for the necessity of this shift in emphasis that prompted him to take this dramatic action (Ryle, 1948).

When any new discipline or movement is formed many of its adherents tend to join with an enthusiasm that leaves little time for dwelling on past interests. The new movement to the epidemiology of non-communicable disease, while making valuable contributions to medicine, is perhaps threatening to create a generation of epidemiologists who will know little of the problem of acute disease epidemiology. This is to ignore the lesson of Hirsch. We still do not know the reasons for the disappearance of leprosy from Europe during the sixteenth century, nor do we know why mortality from tuberculosis was declining during the late nineteenth century when social conditions had not improved to the extent that they could have accounted for this. Why is the B-haemolytic streptococcus, which is till being carried by many of us, not causing sub-acute bacterial endocarditis to the same extent that it did only twenty years ago? Could experience of virus infection predispose to cancer? We ignore the epidemiological investigation of our biological micro-environment

at our peril.

I have begun this comment on modern epidemiological history with the expression of a personal fear. This is justified because when Terris described the scope and methods of epidemiology in a paper published in the American Journal of Public Health (Terris, 1962) he was so concerned with communicating the present shift of emphasis that he ignored the contribution that still remains to be made by epidemiology to the further understanding of communicable diseases. In the same paper Frost's definition of epidemiology as the 'science of the mass phenomena of infectious disease' is criticised as being both inaccurate and restricting. It was inaccurate because there were several contributions to the literature of non-communicable disease epidemiology made before this definition became popular. It was restricting because Wade Hampton Frost of Baltimore was a renowned teacher of epidemiology and therefore influenced many by the spoken as well as by the written word. It was perhaps unfair to single out Frost for criticism as Frost was one of the first to teach that epidemiology had a role in the understanding of the aetiology of cancer. (Frost, 1941).

In a later paper Terris (1963), drew attention to the neglected work of Joseph Goldberger who demonstrated the use of epidemiological methodology in revealing the cause of pellagra (thought until his time to be an infectious disease) by a combination of observational and experimental studies (Goldberger, 1914). Even today this work remains a classical contribution to epidemiological thought (Morris, 1964).

It is unlikely that in the near future studies in the field of cancer or arterial disease epidemiology will achieve this peak because of the multifactorial nature of their aetiology but with increasing experience of recording medical observations for automated data processing and with increasing sophistication and speed in the analysis of data an organisation may eventually come into existence which will collate the experience of the diagnosis, treatment and outcome of disease as it occurs in the community. From this will eventuate hypothesis of causal significance which will not only throw light on selected areas of chronic disease but on the totality of illness as it affects the population.

This review of the history of epidemiology makes no

attempt to be exhaustive. The history of the ideas and events described are only those relevant to this thesis. It is difficult to view the epidemiological events of the past twenty years in historical perspective and for this reason those which have a particular bearing on this thesis will be discussed in the context of the research as it is presented.

C H A P T E R II.

The Nature of Mortality Data for Cerebrovascular Disease.

Introduction.

'Without embarrasing ourselves with the difficulties the vast theories of life present, there is a definite task before us - to determine, from observation, the sources of health and the direct causes of death in the two sexes at different ages and under different conditions. The exact determination of evils is the first step towards their remedies.' - William Farr (1872.)

Scotland is second only to the United States non-white population in having the highest mortality rate for vascular diseases of the central nervous system in the Western Hemisphere (Segi, 1966), (Howitt personal communication, 1969). It is incumbent on any epidemiologically oriented investigator to be aware of the psttern of mortality for the disease in which he is interested and it is thus appropriate to demonstrate the apparent trend in mortality from this rather neglected but important (the third commonest cause of death in Scotland) disease which imposes such a heavy burden on the medical and social services of our community (Acheson, 1970).

It is common for some medical practitioners to

denigrate the efforts of the Registrars General and others to provide tabulations and analyses of data contained in death certificates. This is to ignore the only source of the accumulated medical opinion of a nation on the changing pattern of disease. This situation, will obtain until morbidity reporting schemes for general practice become common. Every individual who dies is required, by law, to have a death certificate. Every individual who is ill does not necessarily come into contact with any agency for medical care. This is the essential difference between mortality and morbidity data. Whereas mortality data reflect the experience of fatal disease of the total community, morbidity data at their present level of organisation can only provide information on a sample of the population and it is usually not possible to determine the extent to which the sample is representative of the population from which is was drawn. This introduces a form of selective bias (Lillienfeld, 1967), into morbidity statistics from which mortality statistics are exempt. On the other hand the mere quantity of death certificate data cannot make up for the qualitative possibilities of morbidity data.

Investigations into the accuracy of certification of the cause of death such as carried out by Heasman and Lipworth (Heasman, 1966) draw attention to many difficulties affecting the interpretation of death certificate data without doing anything to solve them and until studies are undertaken to indicate how random groups of medical practitioners certify death given the same case history and the same clinical signs it will remain impossible to come to any but tentative conclusions from the analysis of mortality data. As far as cerebrovascular disease is concerned, the extent to which the pattern of certification of death is likely to reflect the true pattern of mortality must be determined in order to give some clue to the validity of the data under examination.

Considerations Affecting the Validity of Certification of Death from Cerebrovascular Disease.

"Matilda told such Dreadful Lies,
It made one Gasp and Stretch one's Eyes:
Her Aunt, who from her Earliest Youth,
Had kept a Strict Regard for Truth,
Attempted to Believe Matilda:
The effort very nearly killed her." Matilda : Hilaire Belloc.

Acheson (1966) considers three factors which enhance the validity of death certificates. Essentially these are -

1. The ease with which the diagnosis is made.
2. The extent to which the illness is lethal.
3. The method of classification of the information contained in the death certificate.

1. The ease with which the diagnosis is made.

Most cerebrovascular accidents resulting in death cause sufficient disruption of the central nervous system to be easily recognised as such by the average practitioner. Thus the system is likely to be correctly designated on the death certificate but the diagnosis in pathological terms is only likely to be correct if the signs are clear cut or if the individual has been subjected to intensive examination before or after death has occurred.

Given the assumption that patients who die in hospital from cerebrovascular disease have a better chance of being correctly diagnosed than patients who die outside hospitals, an attempt was made to assess the value of death certificate data for the City of Glasgow by determining the number of individuals in a given area who died of cerebrovascular disease in hospital and comparing this with the number of individuals living in the same area certified as dying from cerebrovascular disease. Three Glasgow Wards were studied: Provan, Springburn and Ruchill. The number of individuals certified as dying from cerebrovascular disease in each of these areas was obtained from the Medical Officer of Health for the City of Glasgow, who receives this information from the Registrar General. The number of individuals dying in hospital was obtained by searching the diagnostic indices of all the hospitals in the City of Glasgow for cases dying of cerebrovascular disease whose home address was coded as being in either of the three Wards. All the hospitals had to be visited as Glasgow hospitals receive cases from a wide area and there is considerable overlap. Table I shows the number of hospital deaths expressed as a percentage of the total deaths in each Ward for the year 1967. It is clear from this that the majority of people who are

certified as dying from cerebrovascular disease in the Provan and Ruchill Wards die at home, and that this situation is reversed in the Springburn Ward. There is no apparent reason for this. The areas were chosen because they were homogeneous as regards social class and age structure which may be important criteria in determining the possibility of admission to hospital. Table 2 gives the age group of those dying of cerebrovascular disease in the three areas. This table is dominated by those aged 65 and above, and it is clear that if most of the individuals who die from cerebrovascular disease in the areas studied die outside hospital, and if most of these are over the age of sixty-five (age was not listed on enough M.O.H. returns to justify analysis for those who died at home) then the chance of a valid diagnosis appearing in the death certificate would be less certain. This does not mean that general practitioners cannot differentiate between the different syndromes of cerebrovascular disease and that hospital clinicians can.

Table 3 records the number of admissions in one year coded to the diagnostic categories of cerebral haemorrhage and cerebral thrombosis and embolism in the four medical units of a major Glasgow teaching hospital. Units 1, 2 and 3 have an approximately equal bed usage (the number of bed/days/year

is approximately equal) and Unit 4 is a geriatric unit with a slightly smaller bed usage. As there was no overall tendency for one unit in particular to admit cases from any particular area (Gillis and Kirk, 1968) and as ninety-one per cent of all cerebrovascular diagnoses were coded to cerebral haemorrhage and cerebral thrombosis and embolism, it became possible to speculate from Table 3, that in Unit 1 there is a tendency for cases of cerebrovascular disease to be diagnosed as cerebral haemorrhage: in Unit 2, as cerebral thrombosis and embolism: in Unit 3, as cerebral haemorrhage and in Unit 4, the clinicians appear to decide more evenly between the two major diagnostic categories. These trends are seen both in males and females and the figures for the geriatric unit may be partly explained by the assurance of at least one geriatrician that it is regularly possible to distinguish clinically between the two conditions in old people (Caird, personal communication, 1970).

As 50.6 per cent of those who died of cerebrovascular disease died at home in the three areas studied, (almost the same figure as reported by the Registrar General for England and Wales, (Registrar General England and Wales, 1960)) and as the diagnosis was confirmed by post-mortem in only 16 out of the 114 hospital deaths in the three areas, it could be misleading to

rely on accurate certification in the areas studied. It would also appear likely that hospital based studies of morbidity in the diagnostic categories of cerebral haemorrhage and cerebral thrombosis and embolism would be inconclusive. Although it is not possible to extrapolate statistically from this small study to Scotland as a whole, there is no reason to believe that general practitioners and hospital doctors differ in their approach to the certification of death from cerebrovascular disease in one part of Scotland compared with another, though cerebrovascular disease is certified more from urban than from rural areas of Scotland (Table 4).

Reid and Rose (1964), in an international study of death certification, found that there was a good measure of agreement between physicians in Britain, Norway, and the United States in certifying deaths from cerebrovascular disease taken as a whole, but when the same sample of physicians had to attribute the case histories to a specific diagnostic category of cerebrovascular disease, there was very little agreement. Further study of the literature confirms these conclusions.

Swartout (1940), Munk (1952), James (1955), Moriyama (1958), Erhardt (1959), have all reported a percentage

agreement of 80 per cent or over between clinical and post-mortem diagnoses for cerebrovascular disease taken as a whole. These contributions do not give adequate figures for proper assessment of the situation for the various diagnostic categories. Part of the reason for this lies in difficulties in interpreting changes in the classification of the various syndromes which constitute cerebrovascular disease. This will be more fully discussed later in the chapter.

Yates (1964), in a review of the Registrar General's study of the validity of death certificates in ten hospitals in different parts of England and Wales, (Registrar General, 1956) points out that although there were many individual differences between clinical and post-mortem diagnoses, from a statistical point of view there was only a small degree of error when the results were studied as a group. The clinicians over diagnosed cerebral haemorrhage in 1955 by a factor of 1.25/1, and they overdiagnosed cerebral infarction by a factor 1.08/1. Yates further points out that this suggests that in 1955, at least, deaths from strokes in the hospitals sampled were divided about equally between the two types. One might also interpret this to mean that clinicians have only a 50 per cent probability of reaching the correct diagnosis for either

cerebral haemorrhage or cerebral infarction and also that if a rise is found in the pattern of certification for one condition an equal and opposite fall might be expected in the other, especially since the percentage of post-mortems normally carried out for cerebrovascular disease is small. Haesman and Lipworth (1966), in a review of certification for selected causes of death in 1959, conducted in seventy-five hospitals in England and Wales (Haesman was also responsible for the earlier study quoted by Yates) confirm the difficulty of distinguishing clinically between cerebral haemorrhage and infarction and emphasise the tendency to overdiagnose both conditions. In their opinion this could affect the estimated mortality from other conditions such as coronary thrombosis. Thus Haesman and Lipworth would tend to cast some doubt even on the validity of the conclusions reached by the workers quoted earlier, as in their series 356 cases (35 per cent) out of a total of 1242 cases with a clinical diagnosis of cerebrovascular disease turned out to have a diagnosis outwith this category of disease. However, in Haesman's series only cases which were in doubt diagnostically came to post-mortem, i.e. 35 per cent of all the cases in the series and it is questionable whether in the cases without

post-mortem, where the clinicians felt that the diagnosis was 'fairly certain', 'probable' or 'uncertain' that the diagnosis was in fact correct.

Florey et al., (1969), in a population-based study comparing post-mortem reports with clinical records and death certificates showed an average agreement of 72 per cent. Other authors, such as Otterland (1964), who reach much the same conclusions as Florey though his series is a hospital series rather than a population based study are Moriyama, (1966), who describes diagnostic 'consensus' rather than diagnostic 'proof' and Sox, (1966), who inquired into the validity of cardiovascular-renal deaths as part of the Inter-American Mortality Investigation and produced similar figures and conclusions.

2. <u>The extent to which the illness is lethal.</u>

When the course of a disease from onset to death is short the diagnosis, provided it has been made, will almost always appear on the death certificate (Acheson, 1966). The application of this statement to the validity of certification for cerebrovascular disease is shown by the examples which preface the 'International Certificate of Cause of Death' adopted by Scotland on 1st January, 1964,

and illustrated in Figure 1. Part I of the certificate asks for the sequence of morbid events which lead directly to death. Part II asks for other diseases which, though not involved directly, could by their presence affect the sequence described in Part I.

Example 3 makes the point best -

"A patient suffering from a residual hemiparesis following a cerebral thrombosis several years ago falls at home and sustains a fracture of the neck of the femur. During immobilisation following this injury the patient develops hypostatic pneumonia from which he dies."

The proper form of certification in this sequence of events is given as -

Part I. "a) Hypostatic pneumonia

b) Immobilisation.

c) Fracture of the neck of the femur

(accidental fall at home)

Part II. Hemiparesis - old cerebral thrombosis. "

Following the rules of the International Statistical Classification of Disease the underlying cause of death would be fracture of the neck of the femur and it is this cause that would appear in the eventual tabulations of the Registrar General

(Registrar General, personal communication, 1970) despite the possible assumption that an individual with a hemiparesis is more likely to fall than an individual of the same age and sex without this disability.

On the other hand in example 4 'A patient with a long standing hypertension with compensated conjestive cardiac failure and history of cardiac asthma dies following a short illness characterised by sudden onset of hemiplegia and loss of speech'.

The proper form of certification in this sequence of events is given as -

Part I. "a) Cerebral Vascular Accident.

b) "

c) "

Part II. Hypertension.

Hypertensive heart disease."

Again following the rules of the International Statistical Classification of Disease this sequence of events would appear in the Registrar General's tabulations under Hypertension (Registrar General, personal communication, 1970).

These two examples indicate the difficulty of getting a death in which cerebrovascular disease has been a causal

factor into the tabulations produced by the Registrar General. The lesson from this is that practitioners who routinely certify death need to be aware of the procedure that follows certification so that they may ensure that whatever they believe to be the underlying cause of death will be considered as such by the Registrar General.

Thus a more stringent criterion of validity than the extent to which the illness is lethal, might be how likely a given disease is to produce a sequence of morbid events leading to death that would be uniquely identified with its presence, for example, diabetes mellitus and diabetic coma.

It is clear from the examples quoted that this problem is inextricably linked with problems arising out of the administration of the International Statistical Classification of Disease.

3. <u>The International Statistical Classification of Disease.</u>

"Classification is a method of generalisation. Several classifications may, therefore, be used with advantage: and the physician, the pathologist, or the jurist, each from his own point of view, may legitimately classify the diseases and the causes of death in the way that he thinks best adopted to

facilitate his enquiries and to yield general results."
William Farr (1856).

As stated in the chapter on the History of Epidemiology, the proper statistical study of disease began with the work of John Graunt on the analysis of the data contained in the London Bills of Mortality and was defined as belonging to the realm of medicine by William Farr.

Farr's reputation as a medical statistician was such that at the first International Statistical Congress held at Brussels in 1853 he was asked, together with d'Espine of Geneva, to prepare a system for the nomenclature of disease that would be acceptable to all the participating countries. Farr's system for classification of disease by anatomical site as refined by a series of revisions in 1874, 1880 and 1886 survive as the basis for the International List of Causes of Death. Farr's principle of distinguishing between generalised diseases and diseases confined to particular organs was incorporated by Bertillon (1851-1922), head of the Statistical Department for the City of Paris and Chairman of the International Statistical Institute, (successor to the International Statistical Congress) into the first International Classification of Causes of Death (1900). The Health

Organisation of the League of Nations, the predecessor of the World Health Organisation was closely interested in the deliberations of the International Statistical Institute (Roesle, 1928) and representatives from each organisation were responsible for the fourth and fifth revisions of the Classification. The Sixth Revision, which is the Classification used for most of the statistics dealt with in this thesis, was introduced in Paris in 1948 by the International Conference for the Sixth Revision of the International Lists of Diseases and Causes of Death. Further revisions have taken place. The 1955 (Seventh) Revision was limited to removing errors and inconsistencies. The Eighth Revision (1965), was published in 1967 and used in the reports of the Registrar General in 1968.

Each change in the Classification has caused changes in the pattern of certification (Acheson, 1966), (Kurtske, 1969), and it is only possible to approximate from one revision of the Classification to another. Thus for disease entities which are considered to include a variety of differing pathological processes, such as cerebrovascular disease, it is necessary to discuss the territory included in the relevant rubrics. At the Sixth Revision, the rubrics for cerebrovascular disease or

vascular lesions of the central nervous system as they are described in the Classification are given as 330-334., collectively, and as 330, Sub-Arachnoid Haemorrhage., 331., Cerebral Haemorrhage, 332., Cerebral Thrombosis and Embolism 333., Spasm of the cerebral arteries and 334., other and ill-defined vascular lesions affecting the central nervous system.

This means that every death for which cerebrovascular disease is thought to be the underlying cause has to be assigned to one or other of these rubrics. 330., Sub-Arachnoid haemorrhage first appeared in the Registrar General's reports for Scotland, England and Wales in 1950. The official diagnoses for inclusion in this rubric are "meningial haemorrhage, ruptured congenital cerebral aneurysm, and sub-arachnoid haemorrhage."

331. Cerebral Haemorrhage. This rubric includes "apoplexy, haemorrhagic stroke; rupture of blood vessel in the brain; subdural haematoma, not due to trauma." Haemorrhage from the various specified parts of the brain with or without hypertension and arteriosclerosis are also included.

The term apoplexy can be particularly misleading. It appears to have a wide meaning to medical certifiers of death and to lay coding clerks. Many use it to refer to all forms of stroke, not just to haemorrhage, and evidence will

be presented later to show that even the word stroke is considered by many lay people to refer to myocardial infarction as well as to cerebrovascular disorder.

332. Cerebral Embolism and Thrombosis. It would be preferable to separate thrombosis from embolism, however this is assuming that the two conditions can be easily separated clinically.

333. Spasm of the cerebral arteries. This cause of death only appears rarely in the tabulations of the Registrar General. It represents an earlier stage in the understanding of the mechanism of cerebrovascular disorder (Kurtzke, 1959). However, it is of interest to note that one of the cases of cerebrovascular disease admitted to the Glasgow Teaching Hospital mentioned earlier was coded to this category in 1968.

334. Other and ill-defined vascular lesions of the central nervous system. This serves as a repository for diagnoses not allocated to the rubrics already described. It includes a wide variety of conditions such as "apoplectiform convulsions; cerebral arteriosclerosis, arteritis, congestion, effusion, endarteritis, hyperemia, thromo-angiitis obliterans and hypertensive encephalopathy."

In the recent revision of the Classification in 1965 which appeared in the Registrar General's reports for 1968

(published in 1969) the rubrics allotted to cerebrovascular disease have been increased from five to nine and include sub-classifications to allow for the presence of hypertension. This is justified from a theoretical point of view but those experienced in studies of death certification will know that it takes two or three years for a new classification to be administered effectively and, as the rubrics for the Sixth Revision appeared in 1950, it would have been more practical to allow them to run until 1970 so that a twenty year period on one classification could have been available for study.

The question of whether death certificates for vascular disease of the central nervous system are worth analysing must now be faced. From all that has been said in this chapter it is hoped that an impression will have been created that the pattern of mortality from cerebrovascular disease as a whole is worth study and that the pattern of certification for this group of disease is likely to reflect at least the trend of the true situation if this could ever be determined. As far as the separate diagnostic categories are concerned the position appears to be less favourable. Despite this many reputable authors have carried out studies using mortality data for cerebrovascular disease. Perhaps

they all had in mind Greenwood's aphorism "The scientific purist who will wait for medical statistics until they are nosologically exact is no wiser than Horace's rustic waiting for the river to flow away."

The depth of this investigation into the pattern of certification of cerebrovascular disease could be said to have been stimulated by a paper by Yates published in the Lancet in January, 1964, on 'A change in the pattern of Cerebrovascular Disease'. Yates' argument was that the statement of the Registrar General that the slight rise in the death rate from cerebrovascular disease in a five year period is entirely attributable to the increasing age of the population (Registrar General, 1960) is misleading because what in fact has happened is that in England and Wales over the period 1932-1961 there has been a rise in the number of cases due to cerebral infarction. Yates also comments that "It would be a little surprising if the rate for cerebral ischaemic disease had indeed remained constant when by contrast that for cardiac ischaemic disease has apparently increased enormously over the past thirty years (Martin 1956, Bronte Stewart 1959)." It should be said that this apparent increase in cardiac ischaemia disease has been questioned by some distinguished

authors such as Campbell (1963, a, b,) Bedford (1968), and, in particular, Robb-Smith (1967), who believe that the apparent increase in ischaemic heart disease can be entirely explained by changes in medical terminology and by the ageing of the population. However, the weight of medical opinion falls on the side of those who consider that the rise in cardiac ischaemic disease is real and the recent study of Anderson and Le Riche using sudden death as an index of ischaemic heart disease as recommended by the W.H.O. Expert Committee on Cardiovascular Diseases and Hypertension (1959) have convincingly demonstrated a real increase in cardiac ischaemia in males aged 45-64 during this century in the province of Ontario. (Anderson and Le Riche, 1970).

Thus, if the increase in myocardial ischaemia is real, what of the increase in cerebral ischaemia?

In October, 1964, approximately ten months after the appearance of Yates' article in the Lancet, Kreuger and Paffenbarger presented a paper to the Epidemiology Section of the 92nd Annual Meeting of the American Public Health Association, which studied carefully death rates in Memphis, Tennessee, from 1920-1960. They examined 49,000 deaths from all causes during triennial periods centred around the census years. They re-coded these deaths according to the rules for the Seventh Revision of the International Statistical Classification of Diseases using a doctor to decide upon the

underlying cause of death and they presented for examination all deaths where cerebrovascular disease was considered to be either an underlying or a contributory cause of death. They concluded that cerebral haemorrhage was, like hypertensive disease, decreasing in frequency of occurrence and that cerebral embolism and thrombosis was, like coronary heart disease, increasing in frequency of occurrence during the period of study. It should be noted that negroes comprise approximately forty per cent of the Memphis population and apparently have a greater experience of hypertensive disease than white people. (Nichaman, 1962) (Goldberg, 1962) (Borhani, 1965). This would put negroes at greater risk of cerebral haemorrhage (Kurtzke, 1969, considers that negroes have the same experience of cerebral haemorrhage as white people) and the fact that the presence of such a large number of negroes in the population studied by Kreuger and Paffenbarger did not obscure the apparent change in the pattern of mortality from cerebral haemorrhage adds some weight to their conclusions.

In view of what has just been said, how do the critical views of the validity of death certificate diagnoses expressed in the previous section of this chapter affect the studies of Yates, Kreuger, Paffenbarger? Kreuger and Paffenbarger

removed the bias incurred by successive revisions of the International Statistical Classification and the accompanying abstracting procedures. Yates was able to supplement his studies by a post-mortem study in which he compared the frequency of post-mortem diagnosis of cerebral infarction and cerebral haemorrhage in three Manchester Hospitals and found that the pattern of post-mortem diagnoses for stroke was almost identical with that for the population as a whole for these two diagnoses. While appreciating that his hospital series was not representative of the population as a whole he states that "while there might, at times, be a bias in favour of or against the admission of strokes to a particular hospital, it is unlikely that such policies could discriminate deliberately between the different varieties of stroke". He therefore submitted that the Registrar General's figures do, in fact, reflect the true pattern of disease for cerebral haemorrhage and for cerebral infarction.

It is tempting to conclude that, whilst the reservations mentioned in the first section of this chapter must stand, it is encouraging, if the validity of the work of Yates and Kreuger and Paffenbarger is accepted, to examine mortality patterns for cerebrovascular disease not just as a

group but also for the separate diagnostic categories of cerebral haemorrhage and cerebral thrombosis and embolism given in the Sixth and Seventh Revisions of the International Statistical Classification of Disease in the realistic hope that they may reflect the true pattern of mortality.

'Who against hope, believed in hope.'

Romans. iv. 18.

C H A P T E R III.

The pattern of Mortality from Cerebrovascular Disease and Arteriosclerotic and Degenerative Heart Disease in Scotland, England and Wales (1947 - 1966).

"It is a capital mistake to theorise before one has data"
Conan Doyle.
"The Adventures of Sherlock Holmes."

The major reason for having a separate volume of tables and illustrations (Volume II) was on account of the bulk of the tables that relate to this chapter of the thesis (Tables 5 - 192 illustrated by Figures 2 p.194 - Figure 27 p.219), and having done so it seemed logical to include the tables and illustrations relating to the other chapters in that volume.

The data presented comprise the crude and direct standardised mortality rates for males and females by five year age groups for cerebral vascular disease by diagnostic category (I.S.C. 330, 331, 332) and as a whole (I.S.C. 330 - 334) and for arteriosclerotic and degenerative heart disease (I.S.C. 420 - 422) for the period 1947-1966. The inclusion of statistics for arteriosclerotic and

degenerative heart disease is for the purpose of comparison only since this category of disease approximates most closely in nature to cerebrovascular disease as a whole. The rubrics allocated to this category by the International Statistical Classification (Sixth and Seventh Revisions) are given as:

420.	Arteriosclerotic heart disease including coronary disease
420.0	Arteriosclerotic heart disease so described
420.1,2.	Coronary thrombosis.
421.	Chronic endocarditis not specified as rheumatic.
422.	Other myocardial degeneration
422.0	Fatty degeneration of heart.
422.1.	Myocardial degeneration with arteriosclerosis.
422.2.	Other myocardial degeneration.

The crude data was abstracted from the tabulations of the Registrars General for Scotland, England and Wales and expressed as a rate per million using the Registrar General's population estimates as the denominator for each of the years from 1947 - 1966. In the case of subarachnoid haemorrhage (I.S.C. 330), and arteriosclerotic and degenerative heart disease (I.S.C. 420-422) which only appeared as separate rubrics in the Registrar General's

tabulations, from 1950 onwards the tabulations and graphs are presented only from that time. No attempt has been made to extrapolate back to 1947. As the rubric numbers and terminology of the Sixth and Seventh Revisions of the Classification are operative over the largest time period of this study, they will be used for the total period where applicable. The standard population is the population of Scotland in 1951 as determined at the 1951 census and the procedure for direct standardisation carried out according to the method of Bradford Hill (1966). This population was chosen so that the most realistic impression of any recent changes in the pattern of mortality could be detected. The rubrics examined are presented graphically in the following groups -

1. Females of all ages taken together.
2. Females aged 35-49.
3. Females aged 50-64.
4. Males of all ages taken together.
5. Males aged 35-49.
6. Males aged 50-64.

The age groups 35-49, and 50-64, have been chosen in order to demonstrate what has been happening to cerebrovascular disease in middle life, and especially for comparison with the

rubrics for arteriosclerotic and degenerative heart disease as during middle life an important proportion of the mortality from this cause can be ascribed to ischaemic categories within this group.

Particular difficulty was experienced in achieving an adequate and presentation of the most interesting information contained in the tabulations in Volume II. The major source of this difficulty was the difference in scale between the numbers of individuals dying in the various categories studied and between the numbers in these categories in Scotland and in England and Wales.

In general it may be said that a rate per million living is appropriate for a major diagnostic category such as cerebral haemorrhage, and that a rate per hundred thousand is more appropriate to the numbers involved when describing the mortality pattern for a particular age group especially in Scotland. However, it is very confusing if rates with different denominators are illustrated on the same graph even if one can find a scale to accommodate them. Accordingly all the rates are expressed as a rate per million living and reference may be made to the tabulations in Volume II for the true size of any particular numerator.

The problem of scale has been met by illustrating the rates on a log scale. This enables all rubrics and all age groupings to be displayed on the same scale and facilitates comparison. The log scale has a disadvantage in that its rigidity makes the pattern the author wishes to demonstrate slightly less obvious. In order to compensate for this and to make the argument quite clear the first six illustrations have been drawn on an arithmetic scale. The crude rates are illustrated on the first six graphs only as the major object of this exercise is to determine what has been happening to the pattern of mortality from cerebrovascular disease without having to take into account changes in the age structure of the population.

In illustrating the various rates a convention has been adopted of using 5mm squares or circles instead of points or crosses, in order to emphasize the fact that the true rates may only be in the region of the precise figures expressed in the tabulations.

The downward trend of both crude and standardised rates for cerebral haemorrhage in females in Scotland is shown in Figure 2. The upward gradient of the curve from 1962 onwards is more apparent in the crude line and as can be inferred from

the standardised line is due more to the increase in the number of old women in the population of Scotland than to a true increase in the pattern of certification for this cause of death.

The pattern for males (Figure 3), is much less dramatic but a slightly downward trend is seen. The reason for the crude line approximating to the standardised is because of the much smaller change in the age structure of the male Scottish population compared to the female.

The downward trend for standardised rates for females coded as dying from cerebral haemorrhage is again seen in the case of cerebral thrombosis and embolism (Figure 4), from 1955 onwards. Again the crude rates do not show the same pattern as the standardised because of the comparatively recent change in the age structure of the Scottish female population. Males coded as dying from cerebral haemorrhage show a similar, though less dramatic, fall from 1955 onwards (Figure 5).

In the case of subarachnoid haemorrhage (Figures 6 and 7), a rise in both crude and standardised rates is seen in both males and females.

It is not surprising in view of the previous work quoted, that the rates for cerebral haemorrhage should be decreasing in both males and females. What is surprising is the apparent decrease in the true pattern of certification from cerebral thrombosis and embolism in males and females since 1955. If one accepts that the increase in myocardial ischaemia is real and continuing, then this apparent decrease in cerebral ischaemia is worth further study.

If the Scottish trends are again examined on a log scale using only the standardised rates, the apparent decrease in rates for both cerebral haemorrhage and cerebral thrombosis and embolism in females and males in the curves for all ages taken together and especially the middle-aged groups (50-64), and (35-49), may be detected. (Figures 8, 9, 10 and 11).

The 50-64 age group is a particularly valuable guide, as this is the group where the numbers affected are large enough to be meaningful (in contrast to the younger age group (35-49) where the true numbers are too small to be conclusive) and who are likely to be intensively investigated either before or after death.

Figures 12 and 13 again show the rise in the rates for subarachnoid harmorrhage and Figures 14 and 15 show the

downward trend for the 50-64 age group and the steady trend when all ages and all categories (I.S.C. 330-334) are taken together. The true numbers involved in the 35-49 age group are too small to merit consideration.

When these graphs and tabulations were first shown to a statistician colleague a caution was given against drawing firm conclusions from the Scottish rates on account of the small size of the Scottish population. For this reason the crude mortality figures for England and Wales from 1947-1966 were standardised in the 1951 Scottish population for the same age groupings and the same rubrics so that the English and Welsh mortality experience could be viewed against a Scottish age structure.

The results of this procedure are clear. As there is no reason to suspect that doctors in Scotland differ in their approach to diagnosis and certification from their colleagues in England and Wales and since the Registrars General for Scotland and England and Wales have been following the same coding rules it can be said that the English and Welsh experience of cerebrovascular disease parallels that of the Scottish population. Figures 16 and 17 show the fall in the rates for cerebral haemorrhage. Figures 18 and 19 show

the lack of increase in rates for cerebral embolism and infarction and Figures 20 and 21 show the upward trend for subarachnoid haemorrhage.

Again and more clearly the fall in the rates for all cerebrovascular disease (I.S.C. 330 - 334) is seen in Figures 22 and 23.

Perhaps the most interesting feature of the graphs presented so far is the lack of increase in the rates of cerebral embolism and thrombosis in males and females, especially in the 50-54 age group, after the initial rise in the early fifties which is presumably the continuation of the trend that started in the early part of the century (Yates, 1964). Figures 24, 25, 26 and 27 show that in Scotland and in England and Wales the rates for arteriosclerotic and degenerative heart disease show an upward trend when males and females are considered together. The increase is marked in the 50-64 age group in males, though the 35-49 year old female age group in Scotland only shows a barely perceptible rise in Scotland compared with a clear rise in England and Wales and the all ages curves show little change in males and a clear decrease in females.

Study of the middle-aged groups summarise the argument best as the all ages group tend to be less discriminating

because of the preponderance of individuals aged over sixty-five.

When cerebrovascular disease (330-334) and arteriosclerotic and degenerative heart disease (420-422) are compared, (the purpose of comparison of the categories as a whole makes the argument of whether deaths in the individual rubrics have the same probability of being diagnosed, certified, and coded accurately of less importance) it is seen that, while arteriosclerotic and degenerative heart disease appear to be increasing in frequency of occurrence, cerebrovascular disease appears to be decreasing in frequency of occurrence. In these age groups the increase in rates for males aged 35-49 is greater than the increase for males aged 50-64 for arteriosclerotic and degenerative heart disease. The same is true for females in England and Wales, though in Scotland the increase in 50-64 year old female rates is greater than that for females aged 35-49. As far as cerebrovascular disease is concerned, the small numbers involved in the 35-49 year old age group make it difficult to invite similar comparisons.

Thus if the mortality patterns for two disease categories thought to be similar in nature are essentially moving in different directions, can they really be similar

diseases or has there been a transfer from one disease category to another either because of a change in diagnostic fashion or as a result of a true change in the pattern of disease? The consistency of the results for the presumably carefully investigated younger age group (50-64) make this author believe that a true change has taken place in at least this age group and the increasingly rapid increase in deaths from arteriosclerotic and degenerative heart disease in the 35-49 age group compared with the 50-64 age group prompts the question - are there some individuals who twenty years ago would have lived to die from vascular disease of the cerebral blood vessels now dying from vascular disease of the myocardial blood vessels?

Anderson and McKay (1968), discussing their failure to demonstrate any recent increase in cerebral thrombosis in Ontario, Canada, comment that factors which predispose to irregularities of cardiac rhythm might lead to an increased death rate from coronary thrombosis without causing any comparable increase in the death rate from cerebral thrombosis. One could also conjecture that these same disorders of cardiac rhythm might be responsible not only for changes in cerebral blood flow which might predispose to thrombosis but also for the introduction of emboli into the circulation which might

not only be responsible for cerebral infarction but also for the laying down of further thrombotic material!

Given that similar pathological processes are taking place in the arteries of the brain and heart, it is possible to speculate that, since arteries of the brain differ from arteries of the heart anatomically in the amount and disposition of muscle and elastic tissue (Greenfield, 1958) (Baker, 1937) physiologically in differences in the nerve supply and biochemically in the response of the vessels to varying partial pressures of carbon dioxide (Brain, 1960) not to mention the muscular surroundings of the myocardial blood vessels and the soft almost fluid surroundings of the cerebral blood vessels, that this simple difference of situation and nature could be enough to alter the response of the blood vessels to the pathological processes that affect them so as to explain at least in part the apparent differences in mortality from vascular disease of the cerebral and myocardial blood vessels.

The abstraction of the data and the calculation of the rates for this section of the thesis was carried out and checked manually. A computer was not employed as a major amount of time was expended in abstracting the data rather

than in operating the calculating machine and the abstracted data would still need to have been fed into the computer. If, on the other hand, a stage is reached where the data bank accumulated at the office of the Registrar General is stored on magnetic tape and facilities for access are granted to bona fide investigators then the type of research which has just been described will become not only more practical but more revealing. The conclusions reached from describing the tabulations in graphical form have not been studied in greater statistical depth either in this or in many other similar investigations, presumably because it takes so long to get even to this stage. Several statisticians have expressed genuine interest in the tabulations contained in Volume II not simply as a source of teaching material but also to further investigate the view of the data expressed in this thesis.

The Registrar General's office have recently indicated (Registrar General, personal communication, 1970) that it would welcome requests for assistance from bona fide investigators wishing to make use of its data in order to provide a case for obtaining the necessary equipment to make this possible. If this happens, and the data bank is stored on magnetic tape retrospectively as well as prospectively

and simple statistical programmes are made available as well as mechanisms for record linkage, then the achievement of Farr's ideal quoted at the beginning of Chapter II will be nearer at hand.

> 'The exact determination of evils is the first step towards their remedies.'

C H A P T E R IV.

BRIDGE PASSAGE.

'The transition from the first to the second subject in sonata form.' - Oxford English Dictionary, 1964.

If the reader could superimpose the graphs for the standardised rates for Scotland for both sexes upon those for England and Wales for cerebrovascular disease (I.S.C. 330-334), and for arteriosclerotic and degenerative heart disease (I.S.C. 420-422), he would demonstrate quite clearly that the rates for these diseases are uniformly higher in Scotland than in England and Wales. Segi and Kurihara in their classic publication 'Mortality for Selected Causes in 30 Countries (1966)' drew histograms of mortality rates for 30 countries and showed that Scotland is second only to the United States non-white population in having the highest mortality rate in the Western Hemisphere for cerebrovascular disease (I.S.C. short list B.22) when rates from 1951-1961 are viewed against a theoritical standard international population. If Segi's histograms for deaths from hypertension (I.S.C. short list B.29) which is a prominent cause of cerebrovascular disease are then

examined it is seen that the United States negroes again head the table for the Western Hemisphere while Scotland ranks tenth. While it would be unreliable to conclude from this that hypertension plays a different role in the causation of cerebrovascular disease in the United States non-white population compared to the people of Scotland, it is reasonable to believe, both from a British and an international point of view, that Scotland might provide a fruitful site for a study of the epidemiology of cerebrovascular disease. It has already been shown (Table 4) that the frequency of occurrence of death from cerebrovascular disease appeared to be significantly greater amongst city dwellers than in those who live in less urban surroundings in Scotland and as the Department of Epidemiology was situated in an industrial area of the city, a pilot study which attempted to assess the possibility of a prospective study of the epidemiology of cerebrovascular disease was carried out. A neurosurgeon especially interested in stroke (Professor Brian Jennett) and a neurologist (Dr. A. Melville) contributed to the preparation of a questionnaire which investigated the majority of the known clinical symptoms of stroke. This questionnaire required approximately three quarters of an

hour to administer effectively.

When the doctor turns interviewer and has to ask members of the public for help with his researches he finds himself in a similar position to a market researcher, or the door-to-door salesman in competing for an individual's time. This was the author's experience when carrying out the pilot survey using the stroke questionnaire on a sample of 25 households drawn from the predominantly social class V area that surrounds Ruchill Hospital in which the Department of Epidemiology is situated. Fifty-one visits were needed to complete the 25 questionnaires. In only eight instances was the questionnaire completed at the first visit. The questionnaire was administered to 89 individuals; only one survivor of a stroke was found amongst them and 21 full interviewer/days were required to complete the survey. Given this rate of progress it would take one skilled interviewer approximately 9.3 interviewer/years to accumulate a group of even 100 survivors of stroke in the gendral population. The differences of presentation of the various syndromes of cerebrovascular disease would make this number inadequate for the purpose of statistical analysis in depth by age group and sex and it would clearly be beyond the resources

of a department which did not have specific research grants for the purpose. The size of this type of project may be gauged by the Framingham and Tecumseh projects (Kannel et al., 1961), (Epstein et al., 1965). However, the author was not alone in underestimating the complexity of a useful prospective study of the epidemiology of stroke. Acheson (1963), followed the male pensioners of a large industrial organisation - the group who could be presumed to be at greatest risk - and after four years of following two hundred individuals found only twenty-two with a completed stroke.

A further attempt was made to set up an investigation of the epidemiology of cerebrovascular disease on a population basis using the model of Eisenberg et al., (1957, 1964, 1966).

An area of Glasgow of wide social class distribution with a population of approximately 120,000 was chosen. The names of the forty-nine general practitioners in this area were obtained from the Executive Council for the City of Glasgow who granted permission in principle for the compilation of age and sex registers for the practices in the survey area and it was the author's intention to visit the practitioners regularly over a period of one year to find out from them,

using specially designed reporting forms, the morbidity and mortality from cerebrovascular disease in their practice, with the aim of relating this to the geographical population base of the survey. The Registrar General's office agreed to provide death certificate information for the area.

If this scheme had been carried out not only might it have been successful in providing epidemiological information on the morbidity and mortality from cerebrovascular disease in an urban population but it would have been a convincing demonstration of carrying out a large scale survey using existing resources. Unfortunately the scheme was proposed at a time when many general practitioners were were expressing dissatisfaction with their remuneration and conditions of service, and though the majority of practitioners in the group agreed to co-operate a minority either refused or expressed such doubts as to prejudice the effective operation of the survey.

It was difficult to see what else could be done to further investigate the epidemiology of cerebrovascular disease in the population using existing resources without having recourse to carrying out further studies using hospital records (Carter, 1963) which, as a previous chapter

has shown might not be truly representative of the population. However,

'New occasions teach new duties;
Time makes ancient good uncouth;
They must upward still and onward,
who would keep abreast of Truth.'

James Russell Lowell -
The Present Crisis.

Thus when Dr. V. M. Hawthorne offered the chance of joining the Mass Miniature Radiography Cardio-Respiratory Screening Unit and continuing the study of cerebrovascular disease using multiphasic screening techniques the offer was gratefully accepted though, at the time, it was difficult to see how it could be utilised.

"As the ancients say wisely,
Have a care o' th' main chance,
And look before you ere you leap,
For, as you sow, you are like to reap.'

Samuel Butler: Hudibras.

C H A P T E R V.

The Introduction of a Questionary on Screening for Symptoms of Transient Cerebral Ischaemia.

" - and then to thinking! It is hard if I
cannot start some game on these lone heaths."

William Hazlitt - Table Talk.

There have been many different approaches to screening for disease. They range from the commercial illustrated opposite to that of McKeown who interprets screening as 'medical investigation which does not arise from a patient's request for advice for specific complaints.' Thus, excepting research procedure, if the doctor seeks the patient he is not only under an obligation to identify abnormalities if present but also to ensure that the patient will benefit from subsequent treatment (McKeown, 1969).

The Glasgow Mass Miniature Radiography Unit, on the initiative of Dr. V. M. Hawthorne, extended its activities from screening for tuberculosis to research into screening methods for cardio-respiratory disease in 1962. McKeown's criteria were satisfied as the individuals screened for

cardiorespiratory disease were all volunteers from the groups examined by X-ray for tuberculosis. All volunteers were told of the research nature of the investigations and if an obvious abnormality was discovered both the individual and his general practitioner were informed of its presence. The groups studied by the Cardio-Respiratory section of the Unit consisted of the employees of industrial organisations in the West of Scotland. A satisfactory working relationship between the Unit and the management of the firms concerned was achieved by the Unit's guarantee to the management that each employee who attended the screening unit would only be absent from his employment for a maximum of twenty minutes which allowed the examination to be carried out in time being paid for by the firm.

The week before each factory was due to be visited by the Unit each employee who volunteered for examination received a questionary for self-completion (Blackburn and Rose, 1968), appended in Volume II (Appendix I), which investigated a variety of personal habits, anthropometry, and the examinees experience of a number of symptoms associated with cardio-respiratory disease as well as

providing proper identifying information.

A typical layout of the Unit is shown in Figure 28. The examination of the individual lasted fifteen minutes. First the self-completed questionary was checked for missing information and any doubts expressed by the examinee regarding the questions asked were resolved. Then the triceps skinfold thickness was estimated using the Harpenden Caliper, a standing respiratory function test carried out, using the Garthur vitalograph, a six-lead seated electrocardiagraph, (leads I, II, III, AVR, AVL and AVF) obtained, a seated blood pressure estimated using an anaeroid sphygmomanometer and finally a postero-anterior and left lateral 70mm chest X-ray examination was performed.

This was the Unit the author was invited to join in 1966 with a view to pursuing his studies in the epidemiology of cerebrovascular disease and assisting in the general running of the Unit and its research activities.

It was agreed that the goodwill accorded to the Unit would withstand a further two minutes added on to the examination time and the problem was how could examinees be asked questions about symptoms possibly related to the presence of cerebrovascular disease in this period of time

especially when this had to include the time taken to write down the examinee's name and survey number on the reporting form (Appendix II Volume II).

On account of the circumstances it was decided in consultation with Professor Jennett that the symptoms of cerebrovascular disease most relevant to a screening survey in a working population would be those of transient cerebral ischaemia.

The experience gained in the pilot survey in Ruchill, described in the last chapter, indicated that questions asking about motor phenomena were more likely to be answered accurately than questions about sensory disorders. Eventually the following questions were proposed:

Have you ever had a stroke?

Have you ever without warning

(a) suddenly lost the power of an arm?

(b) suddenly lost the power of a leg?

(c) suddenly been unable to speak properly?

(d) suddenly lost consciousness?

The purpose of asking about stroke was to determine the number of individuals who in regular employment were aware of having had a cerebrovascular accident and loss of

consciousness was included as it was suspected that this symptom occurs frequently as a true symptom of cerebrovascular disorder though it was also realised that it might prove too liable to confusion with faints to prove a reliable indication of disease.

A pre-pilot survey was carried out on hospital staff and patients to determine whether it was possible to administer this questionary in the available time and to reveal the ways in which the questions could be misinterpreted by the interviewer.

This revealed three difficulties: first, that the word stroke is often taken to mean myocardial infarction or other disorder of the heart, second, that loss of power was often taken to mean loss of function due to an accident and third, that loss of consciousness was as suspected often confused with faints. The pre-pilot survey did indicate that the questionary could be completed within two minutes. Given those limitations it was decided to proceed with the questionary under the conditions of a screening survey using a lay interviewer trained as far as possible to establish that the examinee understood the meaning of the word stroke, and to exclude accidents and faints.

If the individual answered 'yes' to a particular question the interviewer was instructed to ascertain how long the incident lasted and if it lasted for an hour or more to tick the appropriate box in the questionary. This was in response to a suggestion by Professor Jennett that possible loss of power or consciousness as elicited by the questionary for an hour or more should be called a completed stroke.

Thus in 1966 out of circumstance and expediency was born what to the best of the author's knowledge is the first investigation into screening for possible symptoms of cerebrovascular disease in this country. While several studies have been carried out dealing with the epidemiology of completed stroke of which the most noteworthy are Kannel et al., (1965) and Chapman et al.,(1966), the only other epidemiological studies related to transient cerebral ischaemia known to the author are those of Halsey et al.,(1967) from Birmingham, Alabama, which is a large complicated and continuing population study of transient cerebral ischaemia carried out by interviewers in the patient's home and that of Kuller et al., from Baltimore (Kuller, personal communication, 1968) which is of a similar nature though less complex.

CLACKMANNAN - VIEW FROM SITE OF SURVEY.

C H A P T E R VI.

An Account of the Administration of the Questionary on Symptoms of Transient Cerebral Ischaemia in Three Samples of the Scottish Population - Clackmannan, Glasgow and Tiree.

"Yet all experience is an arch where thro'
Gleams that untravell'd world, whose margin fades
For ever and for ever when I move."

Tennyson : Ulysses.

The County of Clackmannan is a predominantly rural county occupying a particularly attractive situation amongst the foothills of the Ochill Hills. The majority of the population is occupied in light industry mostly in Alloa, the county town, and in small villages such as Menstrie and Tillicoultry. The companies which own the various factories have a strong paternalist attitude towards their employees reminiscent of the aristocrat/peasant relationship which it replaces. Thus the employees of the factories visited by the screening unit not only lived in rural surroundings but also were part of a community with a distinctly different way of life from their urban counterparts.

Four factories, two in Alloa and one in Menstrie and

GLASGOW, GEORGE SQUARE.

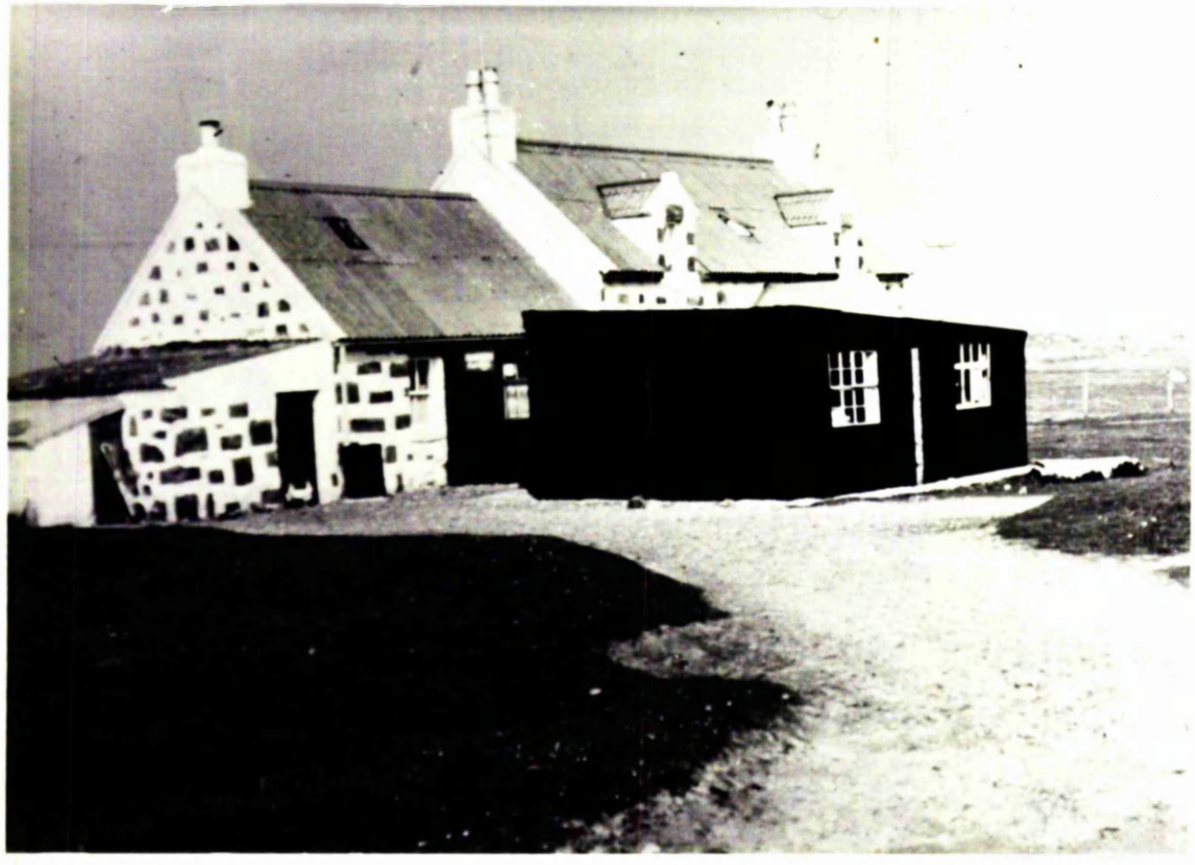
Tillicoultry were visited by the screening unit in 1966. The numbers examined in each factory have been amalgamated and will be referred to as the Clackmannan sample (Table 193).

In order to attempt comparison with other samples only individuals aged 15-64 have been included in the analysis.

As indicated in the last chapter, the author's approach to this study was one of scepticism which was why when it was calculated that 50 people (8.3 per cent) out of the 605 examined said 'yes' to the interviewer in response to one or more questions it was difficult to know whether to be encouraged by the result or to disbelieve it. It was difficult to disbelieve because the author was engaged in estimating blood pressures at the same table at which the interviewers were administering the questionary and was thus in a position not only to overhear the interviewer but to ask further questions when the interview ended and the author estimated the examinee's blood pressure.

It was decided to continue the study when the unit visited two factories in Northern Glasgow. Both factories were engaged in light engineering similar to the Clackmannanshire factories but the employees, as a whole, lived in urban surroundings without the feeling of community that was so

TIREE - POST OFFICE.



apparent in Clackmannanshire.

The numbers in the two factories have been amalgamated and will be referred to as the Glasgow sample (Table 194).

When the questionary was administered by the interviewer to this sample, 50 individuals (8.4 per cent) out of a total of 592 aged 15-64 answered 'yes' to one or more of the questions asked.

The number of positive answers in Glasgow and Clackmannan encouraged the author to include the questionary in the Unit's study of the population of the Hebridian Island of Tiree (Table 195) which will be fully described in the second section of this part of the thesis.

There were two further inducements to encourage the inclusion of the questionary in the Tiree study. First, the opportunity of administering the questionary to a general population sample in contrast to the 'convenience' samples (Dunn, 1964), used in Glasgow and Clackmannan. Second, if the local belief (Bonar, 1965), that blood pressures levels are higher on the island than on the mainland were to be substantiated, then it would be of added interest, given the relationship of stroke to hypertension, to observe the response of a general population sample with increased blood pressure

levels to questions perhaps indirectly related to this. In the event, 19 (4.8 per cent) out of 397 islanders between the ages of 15 and 64 answered 'yes' to one or more of the questions asked.

Table (197) summarises the prevalence of 'transient cerebral ischaemia' in the three samples studied. The numbers of those with possible symptoms are significantly less in Tiree than in either Glasgow or Clackmannan. When the samples are further divided by age and sex (Table 197) the numbers, especially in the female cells of the table, become too small for detailed statistical testing. However it does appear that with the exception of the Glasgow males aged 40-64 and the Tiree males aged 15-39 that the proportion of females who say 'yes' to one or more of the answers in the questionary is greater than the proportion of males.

Figure (29) illustrates the frequency of occurrence of each symptom in the three survey areas.

Perhaps the most striking feature of Figure (29) is the difference in appearance between Tiree, and Glasgow and Clackmannan, which present a similar appearance. The major differences have been described quantitatively by Tables (198) and (199). Table (198) describes the

frequency of each symptom by survey area and sex. In each of the three areas the sex distribution of the symptoms is similar and it is clear that the greater proportion of symptoms have been ascribed to speech and consciousness. The ratio of the number of times a symptom was described as lasting for an hour or more (the recommended definition of stroke) to the total frequency of occurrence of each symptom is shown in Table (199). The frequency of 'stroke' is greater for each symptom on the Island of Tiree than in either of the mainland samples in both sexes and stroke occurs more frequently with arm and leg symptoms than with speech and consciousness.

Further analysis of the female symptoms component of the samples in the 15-64 age group is difficult to interpret on account of the small numbers involved and further consideration of the results for this section of the thesis will be limited to males.

The purpose of further analysis of the male group with possible symptoms of 'transient cerebral ischaemia' (the 'with symptoms' group referred to in the Tables) is to determine whether there are any differences with regard to other variables between those who respond positively and

those who respond negatively to the questionary. Despite the fact that 'stroke' occurs more frequently with arm than with leg symptoms and that the 'stroke' group might therefore be considered more reliable in terms of the validity of the symptoms it has been decided to include in the 'with symptoms' group any male between the ages of 15 and 64 who has answered 'yes' to one or more symptoms whether or not the symptom or symptoms have lasted an hour or more. If any positive association with other variables can be shown, given this 'dilution' then it may be of greater importance.

Table (200) illustrates the mean values with the appropriate standard deviations for self-estimated height and weight in the three samples. All the self-estimated heights and weights were checked at the screening unit and the values quoted in Table (200) are the corrected ones. It is surprising how good the correlation between self-estimated and measured height and weight appears to be. Dr. S.K. Patra calculated that in Clackmannan $r = 0.83$ (Patra, 1968, personal communication).

There were no significant differences between the height of those with and without symptoms. Males 'with symptoms' in Clackmannan and Tiree appeared to be lighter than

those 'without symptoms' and in Glasgow those 'with symptoms' were heavier.

Differences in mean height and weight between Tiree and Glasgow and Clackmannan will be dealt with later in the thesis.

The experience of those 'with symptoms' of 'transient cerebral ischaemia' of symptoms of angina is shown in Table (201 a) and (201 b).

For the purposes of this survey an individual classified as having anginal symptoms is one who experiences pain in the chest on exercise sufficient to force him to stop and which disappears in less than ten minutes after stopping. This represents a slight modification of the criteria in the Rose questionnaire and was introduced when it was found that many examinees were finding difficulty in following the required sequence of thought through from question 23a to question 23g, (Appendix I, Volume II). This difficulty was more apparent in the manual workers than in the managerial staff but it is worth noting that two of the factory managers misinterpreted the complete Rose questionary.

Table (201 a) shows that in general angina occurs less on Tiree than in the mainland samples though chi-squared (X^2)

testing shows that this difference is not significant. When those 'with symptoms' are classified with regard to their experience of anginal symptoms (Table 202 b) it is seen that a consistently greater proportion of those 'with symptoms' of 'transient cerebral ischaemia' experience anginal symptoms than is found amongst those who have no apparent symptoms of 'transient cerebral ischaemia'. This is especially significant on Tiree $p < 0.1$ per cent and shows also when the three sites are taken together $p < 5$ per cent.

According to Rose (1968), a positive answer to the question 'Have you ever had a severe pain across the front of your chest lasting for half an hour or more?' (Question 24, Appendix I, Volume II) constitutes evidence of the presence of infarction.

Table (202 a) shows that symptoms of infarction occur less frequently on Tiree than on the mainland samples though this is not statistically significant. Those 'with symptoms' have a significantly greater experience of infarction in Clackmannan ($p < 5$ per cent) and Tiree ($p < 0.1$ per cent) than those without symptoms of 'transient cerebral ischaemia' (Table 203 b).

The Rose criteria have been again modified, for the reasons stated earlier, for the symptom of claudication.

An individual with symptoms of claudication is taken as one who experiences pain in the calf while walking which forces him to stop and which disappears in less than ten minutes when standing still (Question 26 a, c, g and h Appendix I Volume II). Tables(204 a and 204 b) show the same general pattern observed with the other symptoms. Claudication appears to occur with less frequency on Tiree than in either of the mainland samples and occur more frequently amongst males with symptoms of 'transient cerebral ischaemia' than in those without symptoms. Despite the absence of symptoms of claudication on Tiree the chi-squared test for the 'all' category is significant at less than 10 per cent.

It would appear from the Tables presented so far that males between the ages of 15 and 64 who answer 'yes' to one or more symptoms in the questionary have a significantly greater experience of symptoms of vascular disease in other sites than those without possible symptoms of 'transient cerebral ischaemia'. One interpretation of these results is that those 'with symptoms' are simply individuals who tend to answer 'yes' to questions about their health. Even if this is so and it will be only possible to tell by

prolonged follow-up objective evidence exists that would indicate that the 'with symptoms' group may be at greater risk from vascular disease than those without symptoms of 'transient cerebral ischaemia'. Tables (204 a) and (204 b) give the frequency of occurrence of electro-cardiographic changes that can be classified into Minnesota code (Blackburn et al., (1960)) summary category II (E.C.G.II). This category includes major Q wave abnormalities, S - T junction depressions and P - R junction abnormalities. There are no significant differences between the three samples in the frequency of occurrence of electro-cardiographic changes classifiable under this summary code (Table 204 a). However the percentage of males 'with symptoms' of 'transient cerebral ischaemia' who show E.C.G.II changes is consistently greater in each of the three samples and when all the samples are grouped together though statistical significance is not reached (Table 204 b). Minor E.C.G. abnormalities are included in Minnesota Summary Code Category III (E.C.G. III). These include Q.R.S. abnormalities, axis deviations, 'high' R waves and arrythmias. Significantly more E.C.G. III changes have been recorded on Tiree compared with either the Glasgow or the Clackmannan samples (Table 205 a). Those

'with symptoms' of 'transient cerebral ischaemia' have a greater experience of the minor electro-cardiographic abnormalities classied under E.C.G. III than those without symptoms. These differences are consistent throughout the three samples though not statistically significant (Table 205 b). Understandably in a screening survey where the examinees have to be sufficiently healthy to attend the screening unit there were too few examinees for analysis with severe electro-cardiographic changes classified under Minnesota Summary Code Category I which includes major Q or QS items and left bundle-branch block. Only seven males between the ages of 15 and 64 were found with electro-cardiographic changes of this severity in the total sample and, of these, four admitted to symptoms of 'transient cerebral ischaemia'.

In summary the Tables show:

1. That males aged 15-64 who have experienced symptoms of 'transient cerebral ischaemia' have statistically a significantly greater experience of symptoms of angina infarction and claudication when all sites are considered together which is consistent when each site is considered separately especially on Tiree.

2. That the proportion of males between the ages of.15 and 64 who have experienced symptoms of'transient cerebral ischaemia' is significantly less on the Island of Tiree than in either of the mainland samples.

3. That in general the proportion of males aged 15-64 who experience symptoms of angina claudication and infarction is less on the Island of Tiree than in either of the mainland samples though this is not statistically significant.

4. That there is objective electrocradiographic evidence that males aged 15-64 with symptoms of 'transient cerebral ischaemia' have a greater experience of electrocardiographic abnormalities as classified by by Minnesota Summary Codes II and III than those without symptoms.

5. That there is significantly more minor electro-cardiographic abnormalities on Tiree than in either of the mainland samples.

The indication that those who answer 'yes' to the questions on 'transient cerebral ischaemia' appear to experience more symptoms and signs of vascular disease than those who do not, is summarised by Figures (30), (31), (32) and (33). Further weight is given to this by a glance at

Tables (206 a) and (206 b) which illustrate the experience of cigarette smoking in the three samples and in those with symptoms of 'transient cerebral ischaemia'. These indicate the while there may be little difference in the number of cigarette smokers in the three samples, there is a consistently greater proportion of smokers amongst those with 'transient cerebral ischaemia'. In view of the increased risk of cardiovascular disease conferred on those who smoke cigarettes (Paffenbarger, 1966, 1967,) Table (206 b) is considered to be of importance.

The relationship of those with symptoms of 'transient cerebral ischaemia' to blood pressure has been left to the last as it is to serve as an introduction to the next part of the thesis. This will only be detailed for males aged 40-64 as 't' testing shows that there are no differences apparent in the age group 15-39. Table (207) shows that while males aged 40-64 with 'transient cerebral ischaemia' in Glasgow and Clackmannan have significantly higher mean systolic and diastolic blood pressures, Tiree males 'with symptoms' have higher mean diastolic blood pressures but their mean systolic pressure are lower than for those without symptoms though not significantly so. Thus with the exception of the Tiree

male systolic blood pressures it might be said that a relationship exists between those with symptoms and increased blood pressure levels in the 40-64 age group.

Whenever possible throughout this analysis significance levels have been calculated. The number of times that statistical significanceis achieved might indicate that the results are not due to random chance. However, when this number of significance tests have been carried out it is likely that approximately one out of twenty will be significant, simply as the result of random chance. This is why emphasis has been laid on the consistency of the results in the description of the tables. Given the presence of consistency such as shown by the tabulations statistical significance is likely to be more meaningful as a chance significance does not alter the direction of the interpretation of the results. Small numbers have made it impossible to divide up the groups studied into finer groupings by age and symptom type and have also contributed to the failure of many of the 2 x 2 chi-squared (X^2) tests to achieve statistical significance which is a further reason for relying more on the consistency of the results rather than their degree of statistical significance. This is of particular

importance when it is remembered that any symptom group considered in the tabulations may contain a proportion of individuals who have not truly experienced the symptoms in question. Accordingly, the evidence of the electrocardiographic examinations, the estimations of systolic and diastolic blood pressures and even the cigarette smoking history of the three samples becomes more important as it constitutes objective evidence of increased experience of vascular disorder amongst those with possible symptoms of 'transient cerebral ischaemia'.

As previously stated, 'transient cerebral ischaemia' was considered to be the most suitable clinical entity within the territory of cerebrovascular disease for study under the conditions of a screening survey. Both the author and the lay interviewer received the impression that when an individual answered 'yes' to one of the questions in the questionnaire his recall of the event was usually clear. It is perhaps a cultural phenomenon that only approximately thirty-five per cent of those 'with symptoms' contacted their own general practitioner (informal evidence gathered during the course of the survey) though in general they admitted being frightened by the incident. One individual in Clackmannan

suffered a day's loss of power in his arm without seeking medical attention! Only three individuals, one in Glasgow and two on the Island of Tiree, were recorded as being aware of having suffered a stroke which was not unexpected in a group of apparently healthy individuals employed in factories on the mainland and in crofting on Tiree. No neurological examination of any kind was performed and this study has collected no evidence to indicate that the individuals answering 'yes' to questions related to the possible occurrence of 'transient cerebral ischaemia' in fact experienced this clinical entity. Perhaps the only way of showing damage to cerebral blood vessels is to submit the individual to bilateral carotid and vertebro-basilar angiography as the signs detectable by routine clinical examination are often transitory and even if present at the screening examination could not, in many instances, constitute unequivocal evidence of cerebrovascular involvment.

As survey conditions would never reach a stage where neurological examination was possible, an attempt was made to detect possible cerebrovascular disorder by thermography (Wood,1965). A Smith's 'Pyroscan' apparatus was borrowed during part of the survey. Though the machine functioned

reasonably well under survey conditions, the apparatus necessary for calibrating the thermographs was not supplied and no further opportunity was accorded for the further pursuit of this line of inquiry.

While it was not possible to determine the validity of the symptoms it was possible to give an indication that the questionary recorded reproducible results.

The Clackmannan sample was revisited in 1968 and the questionary administered to 406 (66 per cent) of those who were examined in 1966. Fifteen answers were changed from the answers given in 1966. As each individual has the opportunity to give nine different answers to the questionary (Stroke = 1, symptoms = 4, 1 hour + = 4) then fifteen changes out of a possible 9 x 406 gives a total percentage change of 0.4 per cent in the answers to the questions.

17 individuals admitted to symptoms who had not done so previously, giving a possible annual incidence rate of 2.1 per cent.

The Tiree sample was revisited in 1969. The questionary was administered to 397 individuals of all ages (59.8 per cent) out of the total who had attended previously. The percentage change in answers was $\frac{13}{397} \times 9 \times \frac{100}{1} = 0.36$

and the possible annual incidence as 9 new individuals admitted to symptoms was 1.1 per cent.

The second visit to the Glasgow sample is not yet complete.

While providing a possible clue to the incidence of 'symptoms' and a measure of the reproducibility of the questionary, these second visits to the samples did not yield new information on the validity of the symptoms in question. As a result a case/control study has been set up which is being carried out 'blind' by the author as interviewer. The questions asked relate not only to the examinees' experience of symptoms of 'transient cerebral ischaemia' relevant to occlusion in the territories of the carotid and vertebro-basilar arterial system (Heyman, 1966), but also to anginal, infarction and claudication symptoms as listed in the Blackburn-Rose questionary, as well as including a detailed examination of the examinees' personal habits regarding smoking, exercise, and alcohol consumption.

The cases consist of each of the individuals in the three samples 'with symptoms', and age and sex matched controls randomly selected from the group 'without

symptoms'. The study design allows for the examinees to be questioned till the author is convinced that the answer to the questions asked is the true experience of the examinee. As the study is being carried out 'blind' the author does not know whether he is visiting a case or a control. The study has had to be carried out outwith the activities of the screening unit, at times mutually convenient to the author and examinee. At the time of writing, forty per cent of the Clackmannan examinees, fifty per cent of the Tiree examinees and ten per cent of the Glasgow examinees have been visited and it would clearly prejudice the objectivity of the study if the author permitted himself to examine the results collected to date.

The Registrar General's Office have kindly agreed to 'tag' all the individuals who have participated in the study so that when death occurs the survey unit is informed. To date four individuals (3.4 per cent) out of the group 'with symptoms' of 'transient cerebral ischaemia' have died: three as the result of cerebrovascular accidents and one as the result of myocardial infarction.

The response to this screening survey is shown in Figure (34). The poor response in Clackmannan was due to a strike in one of the factories during the survey. This raises the

issue of whether the results of the survey are misleading because individuals not attending the screening unit might not be attending because of the disorders that the survey was designed to discover (Cochrane, 1951).

Dr. F. R. Calvert, general practitioner on the Island of Tiree, has recently completed a study of the Tiree islanders who did not participate in the survey (Calvert, personal communication, 1970). He is able to show that the frequency of occurrence of circulatory disorders was not different amongst non-responders from that observed in those who attended the screening unit. The response rate for the Glasgow (eighty per cent) and Clackmannan (sixty-two per cent) samples are typical of the response rates for industrial surveys and if Cochrane's dictum applies to the Clackmannan and Glasgow samples, then the prevalence of symptoms reported by this study must be an underestimate. Attention has already been drawn to the possible non-representative nature of the industrial samples (convenience samples, Dunn 1964) and may prompt the question: what has been gained by studying possible symptoms of 'transient cerebral ischaemia' in breadth in convenience samples rather than clearly defined clinical cases in depth in a hospital sample? Marshall, (1964), has produced the

most authoritative hospital based study of 'transient cerebral ischaemia' which is a source of much clinical information. However, his conclusions, for example the sex ratios, are subject to the selective bias that must be incurred by all hospital-based studies. The advantage of working amongst the apparently healthy is that it avoids this bias and allows the investigator to reach a section of the community experiencing possible symptoms of disease, most of whom have apparently not consulted their family practitioner on that account. This is why epidemiology is often defined by various authors as 'the study of the natural history of disease' and when the epidemiologist can bring to the attention of the clinician groups of individuals who are possibly at risk of disease. It is hoped that this section of the thesis may represent a step in this direction.

Heyman, in his paper on the 'Natural History and Clinical Background of Cerebrovascular Disease' states that "the most important clinical evidence of cerebral arteriosclerotic disease is the occurrence of repeated episodes of sensory or motor impairment ..... These attacks are rarely seen in other forms of cerebrovascular disease and perhaps sixty to seventy-five per cent of the patients with cerebral infarction

caused by arteriosclerosis will give a history of prior ischaemic episodes." He also states that many patients with cerebral infarction have a history of angina, myocardial infarction or intermittent claudication (Heyman, 1966).

According to David and Heyman (1960) and Marshall and Kaeser, (1961), electro-cardiographic abnormalities are commonly found in patients with arteriosclerotic cerebral infarction. Those of myocardial ischaemia and disturbances of cardiac rhythm are present in forty-three to forty-four per cent of patients.

Marshall, (1964), suggests that transient ischaemic symptoms, such as hemiparesis, may result in a high incidence of cerebral infarction.

Adams, (1965), Wylie, (1961) Marshall, (1964), stress the role of hypertension in worsening the prognosis of 'transient cerebral ischaemic' attacks. This suggests that the results of this survey are not at variance with established clinical findings regarding the relationship of those with symptoms and signs of cerebrovascular disroder to angina, infarction, claudication, electrocardiographic abnormalities and raised levels of blood pressure.

It seems remarkable to the author that the simple

questionary used in this screening survey amongst the apparently healthy, requiring less than two minutes for interviewer-administration should have apparently been successful in identifying a group of individuals with greater experience of anginal, infarction and claudication symptoms, electrocardiographic abnormalities and cigarette smoking than those who replied in the negative. However encouraging this may be, the author is quite clear that he has yet to define the relationship of this group to neurological disorder. It is hoped that the case/control study will help in this by exploring the symptoms in detail and by placing them in time. If this is successful it would then be of major importance that the case/control group be introduced to a clinically oriented investigator in order that some form of neurological examination be carried out and arrangements made for follow-up. On the other hand if the results of the case/control study are equivocal and the author is unsuccessful in enlisting the co-operation of a clinician then he will still be able to give some assessment of the validity of the group 'with symptoms' using the linkage facility supplied by the Registrar General.

If the high prevalence (Table 196) of symptoms of 'transient cerebral ischaemia' is eventually validated for the general population then their relationship to other symptoms and signs of vascular disorder may explain in part the recent lack of increase in mortality rates for cerebral infarction and the increase in mortality rates for myocardial infarction described in Chapter III.

C H A P T E R VII

Blood Pressure in a Scottish Island Community.

"Something attempted, something done."
Longfellow : The Village Blacksmith.

Perhaps the most important finding of the Tiree survey was the confirmation of the local belief (Bonar, 1965), referred to in the previous chapter that blood pressure levels are higher on the Island than on the mainland (Hawthorne, Gillis, Lorimer, Calvert and Walker, 1969).

Figures (35), (36), (37), and (38), and Table (208) and (209) clearly indicate that in each of the age groups where numbers were sufficient for comparison, mean blood pressure levels on the Island of Tiree in males and females above the age of thirty were significantly higher, Table (210), than in either the Glasgow or Clackmannan samples and Table (211) shows that when compared with the combined English sample of Post Office workers from London, Norwich, Peterborough and Gloucester, and with the combined American samples of telephone workers from Westchester (New York), Washington and Baltimore (Reid, Holland and Rose, 1967), the Tiree levels were still

higher than in the other samples. Levels of blood pressure in the Tiree sample also appear to exceed that of the population of the Orcadian Island of Westray (W. Taylor, personal communication, 1969). The author was responsible for most of the blood pressure estimations in the three samples. The remainder were estimated by Dr. V. M. Hawthorne, and Dr. A. R. Lorimer. As systematic and non-systematic bias (Rose, Holland & Crowley, 1964), can vitiate comparison of blood pressure levels between samples (unless they are very large), an attempt was made to determine the comparability of the blood pressure readings obtained by the three investigators mentioned using an accurate anaeroid sphygonomanometer, with a standard cuff (12 by 24 cms.) as the survey instrument in preference to the London School of Hygiene Sphygonomanometer (Rose et al., 1964), which, though it reduces the possibility of several types of error, is less suitable for field work (Evans and Prior, 1970), and the 'zero-muddler' (Garrow, 1963); (Miall, 1967), which was not commercially available at the start of the survey. A cross-over design (Cochran and Cox, 1960), was used with twelve hospital patients selected solely on account of their fitness to be examined. In this design each patient's blood

pressure was recorded independently by each of the three investigators A, (C. R. Gillis), B, (V. M. Hawthorne), and C, (A. R. Lorimer), in one of the following orders - A.B.C., B.C.A., or C.A.B. Each of these orders was randomly allocated to four of the twelve patients.

The results of an analysis of variance for the systolic and diastolic pressures are given in Tables (212 a) and (212 b). Miss E. R. Dalton was responsible for the analysis for diastolic pressures.

The sum of squares due to differences between patients is as expected significantly greater than the residual sum of squares. It was thought that a patient's blood pressure might change between the first, second and third readings; thus an 'order' sum of squares was calculated and found not significant. The sum of squares due to differences between observers was not significantly different from the residual sum of squares.

Figures (39) and (40) show each observer's readings graphed against each of the other observers. If the recordings of a patient's blood pressure by two observers are identical the appropriate point will lie on the line shown. It is seen that the points are scattered evenly about the line. It was thus concluded, since the influence

of arm circumference on the blood pressure reading (Pickering, Roberts and Sowry, 1954) (Miall Oldham, 1955) appears to be of little significance (Boe et al., 1957) (Epstein and Eckoff, 1967), that the significant differences found in blood pressure levels between the Island and mainland samples were due to true differences in blood pressure levels and not to investigator bias.

This conclusion was supported by the observation that mean measurements of the transverse width of the radiological image of the heart, Figure (41) were significantly larger in the Island compared to the mainland in all age groups and in both sexes, Figure (42) Table (213). The measurement of cardiac width was carried out by Dr. V. M. Hawthorne.

C H A P T E R VIII

The Paradox of Tiree.

"Man is an embodied paradox, a bundle of contradictions" Charles Colton : Lacon.

Attention has already been drawn to differences between Tiree and the mainland samples with regard to experience of symptoms and signs of vascular disorder. It will be clear to the reader that these differences represent an apparent paradox as significantly higher blood pressure levels, significantly greater cardiac widths, and significantly greater numbers of individuals with E.C.G. changes have been observed in the Tiree sample compared with the mainland samples yet the Tiree sample appeared to contain fewer people who experienced symptoms of vascular disorder.

It therefore seemed important to examine these symptoms and signs (angina, infarction, claudication, E.C.G. I, II and III) in relation to mean blood pressure levels in order to determine what differences there were between mean blood pressure levels for those with symptoms

and signs of vascular disorder and those without. Males and females between the ages of 40-64 were chosen for this analysis as the numbers with symptoms are large enough from which to draw inferences if not conclusions.

Tables (213 - 225) give the numbers of males and females in the three samples with and without symptoms of angina, infarction and claudication and with and without signs of electrocardiographic abnormality according to Minnesota Summary Codings I, II and III, the mean and standard deviations of their systolic and diastolic blood pressures, the 't' values and degrees of freedom for the differences between them and the direction of this difference, i.e. whether the mean value for the group with symptoms is greater (+) than for the group without symptoms or not (-). Table (226) summarises this comparison by 't' test analysis by giving the direction of the difference between the mean values and the level of statistical significance. It is seen from Table (226) that the most significant results were obtained with E.C.G. II giving 5 per cent significance on a test that mean blood pressure is higher for individuals with signs in this category than for those without for Clackmannan and Tiree males for diastolic blood pressure and a 1 per cent

significance for Glasgow males for systolic pressure. A significance level of 10 per cent was obtained for Clackmannan males for systolic blood pressure. The analysis of E.C.G.III signs also yielded 5 per cent significance for Clackmannan males for systolic blood pressure. However a negative difference of means significant at 10 per cent was calculated for Glasgow females for diastolic blood pressure. Analysis of E.C.G. I signs yielded no statistically significant results presumably because the numbers involved were too small to make testing for significance possible as no group contained more than three individuals with E.C.G. signs in this category.

The analysis yielded significance levels of 5 per cent for Tiree females for diastolic blood pressure, 10 per cent for Clackmannan females for systolic blood pressure, for the symptoms of angina, and five per cent for Tiree females for both systolic and diastolic blood pressure.

It is notheworthy that the differences between the mean values were twice as often positive (mean blood pressure for those with symptoms greater than the mean blood pressure for those without symptoms) as negative and that eight significance levels were recorded in a positive

direction against only one in a negative direction. Thus it is possible to infer that in the three samples studied individuals with symptoms or signs of vascular disorder are more likely to have higher mean levels of blood pressure than those without.

Figures (43) and (44) illustrate the mean values of systolic and diastolic blood pressure for males and females with symptoms of angina and Figure (45) illustrates the mean values for E.C.G.II for diastolic blood pressure. These illustrations have been chosen because they give the best indication that symptoms of angina and signs of electrocardiographic abnormality may be occurring at higher mean levels of blood pressure on Tiree than in the mainland samples and further suggest that mean levels of blood pressure for those <u>without</u> symptoms or signs in the Island can be higher than for those <u>with</u> symptoms on the mainland.

Thus these illustrations may provide a possible explanation of the paradox referred to at the beginning of this chapter as they suggest the possibility of some factor inherent in life on Tiree that may protect the individual against vascular disorder associated with raised blood pressure levels.

If this suggestion has any basis then the numbers of individuals on Tiree with vascular disorder with high levels of blood pressure should not be greater than for those with low levels of blood pressure. The most objective criterion for vascular disorder was electrocardiographic abnormality (E.C.G.II) and, as the previous analysis showed, yielded the most significant results for tests that mean blood pressure is higher for males with signs in this category than for those without.

The approach suggested by Mr. Douglas McLean of the Department of Statistics, was to take each group of males with and without E.C.G. signs and divide it into three groups so that the divisions might be called low, medium and high and then to compare the high and low groups by chi-squared analysis to see if there were significantly more males with E.C.G. II signs in the high blood pressure group than in the low blood pressure group. Various points of division and various combinations of E.C.G. categories were tried. The ones giving the best results being tabulated in Tables (228) and (229), (prepared by Mr. D.S. McLean) which give the chi-squared values for the low and high blood pressure groups for E.C.G. categories I and II taken together, Table (227), and E.C.G. I, II and III taken together, Table (228).

Significance levels of five per cent were calculated for Clackmannan males (D.B.P.) and for Glasgow males (S.D.P.) for E.C.G. I and II taken together. When E.C.G. I, II and III were taken together significance levels of five per cent and ten per cent were calculated for Clackmannan males for systolic and diastolic pressure respectively.

The most important feature of this analysis is that no grouping of the E.C.G. categories and none of the various points of division for the categories of high and low blood pressure gave even a ten per cent significance for Tiree males.

While it would be unwise to interpret these Tables further at this stage the results do not contradict the suggestion made from Figures (43), (44), and (45), that males in Tiree may have a greater tolerance of higher levels of blood pressure.

The next step in this analysis has been taken by Mr. Douglas S. McLean who is attempting to fit a linear regression of the probability of experiencing symptoms and signs of vascular disorder against blood pressure. The results of this analysis could not be ready in time for inclusion in this thesis but will shortly be submitted to this University for the degree of M.Sc. in statistics.

If on the other hand the raised blood pressure levels in Tiree are an important contribution to the pattern of mortality on the Island, this should be reflected by a marked increase in the percentage of mortality from causes related to this.

The author has personally scrutinised all the death certificates for the Islands of Tiree and Coll (the neighbouring island which is considered with Tiree for statistical purposes (census and registrations of births, marriages and deaths) and has approximately one eighth of its population. Because of the small numbers involved the only practical method of dealing with the information was to code what the author considered to be the underlying cause of death to a theoretical category called 'circulatory deaths' Table (229), which included every I.S.C. rubric relating to any form of cardiovascular disease. This has been expressed as a percentage for the years 1947-1966, Table (229), and expressed in graphical form, Figure (46), compared with Scotland. The instability of the curve for Tiree and Coll is merely a reflection of the small numbers involved; however, there is an apparent rise in the percentage of circulatory deaths from 1959 onwards which is difficult to interpret as

it coincided with the arrival on Tiree of Dr. Bonar (the pratitioner who first suggested that blood pressure levels were higher on the Island when compared with his mainland experience). While it is of interest that the percentage of circulatory deaths on Tiree is in general higher than for Scotland as a whole, the small numbers involved make this finding difficult to explain.

Various attempts are in progress to determine the cause of the raised blood pressure levels on the Island of Tiree. One contributory factor may be that males and females are heavier on Tiree than on the mainland, (Tables 230, 231 and 233), though they are also taller, (Tables 230, 231 and 232). Further work is proceeding using various ponderal indices in order to determine the association of functions of height and weight with mean blood pressure levels and symptoms.

Samples of drinking water from all the Island's sources are being analysed in order to determine if there is any association between the softness of the water and symptoms of vascular disorder.

A sample of first degree and second degree relatives of the Tiree islanders, who are now living in

Glasgow is being studied (preliminary results show that their blood pressures are not significantly different from that of the Glasgow sample) to determine their experience of vascular disorder in relation to heredity and environment. Finally arrangements are being made for the continued surveillance of the three samples studied by this thesis.

One of the most striking features of Tiree is its aura of peace and tranquility. This adds interest to the finding of raised levels of blood pressure as the strains and stresses of modern living are less obvious. This has been further investigated by Dr. J. Walker of the Department of Epidemiology and Preventive Medicine, who incorporated a scale for the measurement of stress into the questionnaire used for this survey. The results of this exercise clearly showed that males on the Island of Tiree, between the ages of 45-64, were subject to considerably less stress than their mainland contemporaries (Walker, Hawthorne and Gillis, 1970).

Miss E. R. Dalton analysed mean blood pressure levels by length of stay on the Island, Table (234), and found significant differences in males aged 30-39 and females aged 40-49 between those who had remained on the Island for less than twenty years compared to those who had

remained on the Island for more than twenty years. Though no significant results were obtained for the other age groups it may be of interest that mean blood pressure levels are higher for males remaining on the Island for twenty years or more for age groups 15-29, 40-49, 50-59 and 60-69, and for females in the age groups 30-39, 40-49, 50-59, 60-69 and 70+. Given this degree of consistency the significant difference in the opposite direction for males aged 30-39 becomes of less importance but remains beyond precise interpretation in the absence of a full history of population movement on Tiree. This is being further investigated.

It may be that the factor that will defeat this survey unit's aim of bringing these investigations of blood pressure on Tiree to a firm conclusion will be the small numbers of individuals in the categories of greatest interest.

Hearsay evidence exists that blood pressure levels are higher than those on the mainland in the more populous of the Western Isles and examination of these may be necessary in order to draw firm conclusions. Other evidence from the literature relating to this is cited in the paper (Hawthorne, et al., 1969), appended in Volume II Appendix III.

Despite the statement in the discussion section of

this paper (Hawthorne et al., 1969), that this survey demonstrates the value of multiphasic screening methods in the study of the natural history of disease in the general population, the author is convinced this is only true in the short term. If advantage is taken of the increasingly rapid development of skill in creating systems for the rapid analysis and dissemination of medical information, then the organisation postulated in Chapter I could result, and if sufficiently widespread, would resolve all the problems of low response rates, difficulties in secondary recall and sample size encountered by this survey. In other words, epidemiology eagerly awaits the provision of a disease intelligence system based on medical record linkage (Acheson, 1967), between all agencies for medical care and the Registrar General.

"Does the road wind up-hill all the way?
Yes, to the very end,
Will the day's journey take the whole long day?
From morn to night my friend."

Christina Georgina Rossetti : Up-Hill.

C H A P T E R IX.

SUMMARY.

Epidemiological Aspects of Circulatory Disease in Scotland.

Introductory Passages.

Epidemiology is defined as the medicine of populations rather than individuals. The thesis deals with the pattern of mortality from cerebrovescular disease in Scotland, England and Wales; the investigation of some possibilities in screening for symptoms of cerebrovascular disease; and a study of blood pressure on the Hebridean Island of Tiree.

Chapter I. A Short History of Epidemiology.

Epidemiology has developed since Biblical times as the study of the 'mass phenomena of disease'. The introduction by Galen of a system of medical thought based on theory rather than observation delayed the development of epidemiology for at least fifteen centuries. However, by the 16th and 17th centuries sound ideas on the behaviour of communicable diseases were in existence. System for data collection developed in parallel and with this the science of bio-statistics. The discovery

of the bacterium gave epidemiologists a pivot for their theories and was responsible, in part, for the concentration of epidemiology on communicable disease. The decline in infectious diseases and the consequent increase in chronic diseases in the earlier part of this century resulted in the modern emphasis of epidemiological thought on non-communicable disease.

Chapter II. The Nature of Mortality Data for Cerebrovascular Disease.

As approximately fifty per cent of deaths from cerebrovascular disease take place at home and grouped data show that hospital clinicians have difficulty in distinguishing between cerebral haemorrhage and infarction, death certificate data for these categories of disease are likely to be unreliable. While this finding is supported from the literature, factors which enhance the validity of death certificates for cerebrovascular disease are discussed and evidence produced indicating ways in which such data may be considered of greater consequence.

Chapter III. The Pattern of Mortality from Cerebrovascular Disease and Arteriosclerotic and Degenerative Heart Disease in Scotland, England and Wales (1947-1966).

The crude and direct standardised mortality rates for males and females by five year age groups for cerebrovascular disease (I.S.C. 330-334 and 330, 331, 332) and arteriosclerotic and degenerative heart disease (I.S.C. 420-422) are tabulated for the period 1947-1966 and the data of greatest interest presented in graphical form. Attention is drawn to the apparent

recent lack of increase in mortality for cerebral infarction which is in marked contrast to the rise in rates for myocardial infarction especially in the population aged 50-64 years. The relationship of the two conditions is brought into question.

Chapter IV. Bridge Passage.

Investigations into the epidemiology of cerebrovascular disease require large resources of manpower. Attempts at collecting data on morbidity and mortality from cerebrovascular disease require co-operation from those who supply such data. As neither manpower nor co-operation were freely available, an invitation to join a cardio-respiratory screening unit and continue the investigation of the epidemiology of cerebrovascular disease using the facilities of the unit was accepted.

Chapter V. The Introduction of a Questionary on Screening for Symptoms of Transient Cerebral Ischaemia.

The cardio-respiratory screening unit and its method of operation is described. A simple questionary on loss of power in the upper and lower limbs and on loss of speech and consciousness is evolved, tested and considered suitable for interviewer administration under the conditions of a screening survey.

Chapter VI. An Account of the Administration of the Questionary on Symptoms of Transient Cerebral Ischaemia in Three Samples of the Scottish Population - Clackmannan, Glasgow and Tiree.

Individuals who have experienced one or more of the

symptoms sought by the questionary have greater experience of symptoms of angina, infarction and claudication and also more signs of electrocardiographic abnormalities as well as greater experience of cigarette smoking than those who have not admitted to such symptoms. If the high prevalence of these symptoms is substantiated this may partially account for the lack of increase in rates for cerebral infarction and the rise in rates for myocardial infarction mentioned in Chapter III. This project is presently being followed up by a case/control study and a record linkage procedure.

Chapter VII. Blood Pressure in a Scottish Island Community.

A study of mean blood pressure levels in age-and-sex-matched samples of the population of the Hebridean Island of Tiree appears to support the local belief that blood pressure is higher on the island than on the mainland. This conclusion may be related to the observation of a greater mean width of the heart measured radiologically in the island population compared with the mainland population.

Chapter VIII. The Paradox of Tiree.

The Islanders of Tiree appear to have a greater experience of clinical signs of vascular disease while admitting to fewer symptoms than their mainland contemporaries. While mean blood pressure levels are generally higher for those

with symptoms and signs of vascular disease than for those without, they occur at higher mean levels of blood pressure in the island population compared to the mainland. Those without symptoms or signs can have higher blood pressures on the island than those with symptoms and signs on the mainland. The hypothesis that island life may protect the individual from the effects of raised blood pressure is explored but not proven.

Chapter IX. Summary.

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M.D. Thesis.

EPIDEMIOLOGICAL ASPECTS OF CIRCULATORY DISEASE IN SCOTLAND.

by

C. R. GILLIS.

Volume II. TABULATIONS AND ILLUSTRATIONS.

TABLE 1.

DEATHS FROM CEREBROVASCULAR DISEASE
IN THREE GLASGOW WARDS (1967).

Ward	Total Number of Deaths	Deaths in Hospital.	Percentage of Total.
Provan	84	32	38.1
Springburn	52	38	73.1
Ruchill	89	44	49.4
Total	225	114	50.6

TABLE 2

HOSPITAL DEATHS FROM CEREBROVASCULAR DISEASES
BY AGE GROUPS AND AREA.

Ward.	AGE GROUPS				
	15-34	35-49	50-64	65+	Total.
Provan	-	1	5	25	31 *
Springburn	-	2	9	27	38
Ruchill	-	3	7	34	43 *

* Age of one individual not given.

TABLE 3.

ADMISSIONS TO A MAJOR GLASGOW TEACHING HOSPITAL FOR CEREBRAL HAEMORRHAGE AND CEREBRAL THROMBOSIS AND EMBOLISM, 1968

MALES

Medical Unit	Cerebral Haemorrhage	Cerebral Thrombosis & Embolism	Total
No. 1	32	0	32
No. 2	11	23	34
No. 3	21	2	23
No. 4	21	18	39

FEMALES

Medical Unit	Cerebral Haemorrhage	Cerebral Thrombosis & Embolism	Total
No. 1	36	4	40
No. 2	7	30	37
No. 3	45	2	47
No. 4	6	18	24

TABLE 4.

URBAN AND NON-URBAN (RURAL) DEATHS
FROM CEREBROVASCULAR DISEASE, SCOTLAND, 1968.

	Cerebrovascular deaths.	All other deaths.	
URBAN	3337	19864	23201
NON-URBAN	6926	33184	40110
TOTAL.	10263	53048	63311

$x^2 = 89.83$ $P < 0.1$

Urban - Glasgow, Edinburgh, Dundee
Aberdeen and Inverness.

Non-Urban - Rest of Scotland.

FIGURE 1.

FORM 11

This certificate is intended for the use of the Registrar of Births, Deaths and Marriages, and all persons are warned against accepting or using this certificate for any other purpose

MEDICAL CERTIFICATE OF CAUSE OF DEATH

Registrar to enter
Dist. No.
Entry No.
Year

To the Registrar of the District of ....

I hereby certify that .... *died on* .... 19 ..

at ....

and that, to the best of my knowledge and belief, the cause of death and duration of disease were as stated below

CAUSE OF DEATH (Please print clearly)		Not to be entered in death register: Approximate interval between onset and death		
		Years	months	days
I	I			
Disease or condition directly leading to death*	(a) .... due to (or as a consequence of)			
Antecedent causes *Morbid conditions, if any, giving rise to the above cause, the underlying condition to be stated last*	(b) .... due to (or as a consequence of)			
	(c)			
II	II			
Other significant conditions *contributing to the death, but not related to the disease or condition causing it*	....			

SPECIMEN

* This does not mean the mode of dying such as heart failure, asthenia, etc.; it means the disease, injury or complication which caused death

Please ring appropriate letter and appropriate figure :—

- *Certified cause takes account of post-mortem information* .... A
- *Information from post-mortem may be available later* .... B
- *Post-mortem not proposed* C

- *Seen after death by me* 1
- *Seen after death by another medical practitioner but not by me* 2
- *Not seen after death by a medical practitioner* 3

If deceased was a married woman, and death occurred during pregnancy, or within six weeks thereafter, write "yes"

Signature *Date*

Registered Medical Qualifications

Address

TABLE 5.

Mortality from Cerebral Haemorrhage (331) Scotland 1947 standardised on 1951 Scottish Population.

Age in years.	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	3	3.2964	-	-
5 - 9	1	1.0286	2	2.0522
10 - 14	-	-	1	1.0009
15 - 19	5	4.2265	1	0.9575
20 - 24	4	3.3924	2	1.9466
25 - 29	3	2.9190	5	4.9660
30 - 34	10	9.1850	8	7.4984
35 - 39	15	13.8855	12	11.4504
40 - 44	33	33.4521	39	39.3276
45 - 49	58	62.0890	74	75.5022
50 - 54	81	90.2178	143	152.0519
55 - 59	133	136.1122	191	197.1693
60 - 64	218	214.7300	305	308.1415
65 - 69	356	343.0416	436	441.3192
70 - 74	432	429.6240	553	570.8619
75 - 79	392	437.7464	484	537.4336
80 - 84	238	262.3236	360	371.3760
85 +	96	113.8656	182	205.8420
All ages	2078	2161.1357	2798	2928.8972
Age Groups.				
35 - 49	106	109.4266	125	126.2802
50 - 64	432	441.0600	639	657.3627
Rates per million				
35 - 49	201.302	208.051	221.387	225.208
50 - 64	1267.241	1236.763	1508.007	1495.624
All ages	839.195	886.178	1058.527	1099.542

TABLE 6.

Mortality from Cerebral Haemorrhage (331) Scotland 1948
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	4.2516	-	-
5 - 9	2	2.0510	1	1.0183
10 - 14	1	0.9947	1	0.9965
15 - 19	4	3.4248	2	1.9358
20 - 24	6	5.0736	5	4.9145
25 - 29	8	7.4520	10	9.6330
30 - 34	6	5.7990	11	10.8955
35 - 39	9	8.3070	20	19.2060
40 - 44	31	31.0062	31	31.1054
45 - 49	54	55.5606	73	73.4453
50 - 54	66	72.8178	127	134.0993
55 - 59	142	143.6898	167	170.8243
60 - 64	206	202.4774	247	247.9386
65 - 69	302	294.9030	441	445.5864
70 - 74	404	395.8796	524	529.8164
75 - 79	376	406.6816	530	574.7320
80 - 84	217	228.9784	347	348.8391
85 +	89	98.3005	215	230.8885
All ages	1927	1967.6486	2752	2835.8749
Age Groups				
35 - 49	94	94.8738	124	123.7567
50 - 64	414	418.9850	541	552.8622
Rates per million				
35 - 49	175.411	180.382	218.764	220.708
50 - 64	1204.777	1174.825	1267.118	1257.866
All ages	771.966	806.838	1036.967	1064.621

TABLE 7.

Mortality from Cerebral Haemorrhage (331) Scotland 1949
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.1167	2	2.0650
5 - 9	-	-	1	1.0138
10 - 14	1	0.9916	3	2.9754
15 - 19	3	2.6073	1	0.9807
20 - 24	3	2.5821	6	5.9694
25 - 29	3	2.7003	5	4.7065
30 - 34	10	10.2010	6	6.2982
35 - 39	19	18.3521	17	16.4866
40 - 44	30	29.6400	35	34.8810
45 - 49	53	53.4081	81	81.0405
50 - 54	77	83.1061	140	146.2160
55 - 59	127	128.4351	174	177.7236
60 - 64	220	217.0080	292	291.8832
65 - 69	277	273.5098	439	445.5850
70 - 74	387	379.3374	517	516.6898
75 - 79	370	389.0180	485	512.8875
80 - 84	223	231.8977	337	338.0110
85 +	87	92.3679	179	183.0096
All ages	1893	1917.2792	2720	2768.4228
Age Groups				
35 - 49	102	101.4002	133	132.4081
50 - 64	424	428.5492	606	615.8228
Rates per million				
35 - 49	189.129	192.790	234.490	236.136
50 - 64	122.4690	120.1643	141.1180	1401.113
All ages	756.917	786.184	1024.510	1039.298

TABLE 8.

Mortality from Cerebral Haemorrhage (331) Scotland 1950 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	1	1.0147	1	1.0130
5 - 9	-	-	1	1.0143
10 - 14	1	0.9928	1	0.9917
15 - 19	1	0.8835	-	-
20 - 24	3	2.6214	1	0.9960
25 - 29	4	3.7260	2	1.9464
30 - 34	2	1.9504	7	9.1878
35 - 39	8	7.7288	11	10.6689
40 - 44	20	19.7620	36	36.0324
45 - 49	41	40.7704	74	73.6818
50 - 54	74	77.0858	129	132.4056
55 - 59	118	117.5280	186	186.6696
60 - 64	178	177.1456	289	290.6762
65 - 69	307	305.0352	409	412.4765
70 - 74	380	374.1100	521	518.8639
75 - 79	364	369.6784	534	545.1606
80 - 84	221	223.4310	347	345.9937
85 +	88	89.2232	164	162.9012
All ages	1811	1812.7272	2713	2730.6796
Age Groups				
35 - 49	69	68.2612	121	120.3831
50 - 64	370	371.7594	604	609.7514
Rates per million				
35 - 49	127.779	129.784	213.324	214.691
50 - 64	1051.579	1042.406	1391.740	1387.299
All ages	722.784	743.312	1019.054	1025.129

TABLE 9.

Mortality from Cerebral Haemorrhage (331) Scotland 1951 standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	7	1	1
5 - 9	-	-	1	1
10 - 14	-	-	1	1
15 - 19	3	3	1	1
20 - 24	3	3	3	3
25 - 29	5	5	2	2
30 - 34	8	8	4	4
35 - 39	8	8	8	8
40 - 44	15	15	40	40
45 - 49	41	41	63	63
50 - 54	94	94	125	125
55-- 59	123	123	197	197
60 - 64	211	211	279	279
65 - 69	268	268	407	407
70 - 74	379	379	508	508
75 - 79	397	397	496	496
80 - 84	191	191	343	343
85 +	103	103	182	182
All ages	1856	1856	2661	2661
Age Groups				
35 - 49	64	64	111	111
50 - 64	428	428	601	601
Rates per million				
35 - 49	121.682	121.682	998.971	197.957
50 - 64	1200.103	1200.103	1367.388	1367.388
All ages	761.056	761.056	998.971	998.971

TABLE 10.

Mortality from Cerebral Haemorrhage (331) Scotland 1952
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	1	1.0523	3	3.1596
5 - 9	-	-	-	-
10 - 14	-	-	2	2.0198
15 - 19	-	-	1	1.0154
20 - 24	4	4.0784	1	1.0088
25 - 29	2	2.0440	4	4.0912
30 - 34	8	7.6832	4	3.8776
35 - 39	6	6.2370	11	11.3708
40 - 44	25	24.9350	33	32.9373
45 - 49	34	33.8980	69	68.9310
50 - 54	67	64.6550	124	122.5864
55 - 59	127	125.9840	162	159.3756
60 - 64	200	198.7200	239	236.9685
65 - 59	289	290.8785	392	389.4520
70 - 74	374	376.2814	475	470.3925
75 - 79	375	367.8750	509	492.1521
80 - 84	212	206.6576	319	313.5770
85 +	89	85.2175	205	197.7430
All ages	1813	1796.1969	2553	2510.6586
Age Groups				
35 - 49	63	65.0700	113	113.2390
50 - 64	394	389.3590	525	518.9305
Rates per million				
35 - 49	124.942	123.716	203.572	201.950
50 - 64	1084.270	1091.755	1179.926	1180.665
All ages	744.012	736.534	958.312	942.531

TABLE 11.

Mortality from Cerebral Haemorrhage (331) Scotland 1953
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0796	3	3.2445
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	3	3.0720	1	1.0225
20 - 24	4	4.2056	3	3.0876
25 - 29	4	4.1204	5	5.1795
30 - 34	1	0.9227	4	3.7328
35 - 39	12	13.1784	9	9.7839
40 - 44	21	21.1029	30	30.1080
45 - 49	37	36.5782	66	65.5182
50 - 54	73	67.8943	110	107.1400
55 - 59	139	136.7204	182	177.2316
60 - 64	191	188.1923	246	240.4896
65 - 69	284	286.4424	386	379.6310
70 - 74	327	334.0632	469	461.8712
75 - 79	381	370.2177	478	451.2320
80 - 84	201	189.4023	305	290.9090
85 +	82	75.5794	178	166.5368
All ages	1761	1732.7718	2475	2396.7182
Age Groups				
35 - 49	70	70.8595	105	105.4101
50 - 64	403	392.8100	538	524.8612
Rates per million				
35 - 49	136.915	134.724	192.238	187.988
50 - 64	1086.974	1101.431	1193.447	1194.158
All ages	722.946	710.526	929.074	899.756

TABLE 12.

Mortality from Cerebral Haemorrhage (331) Scotland 1954
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.2802	4	4.3836
5 - 9	-	-	1	0.9004
10 - 14	1	0.9984	-	-
15 - 19	1	1.0367	-	-
20 - 24	2	2.1480	2	2.0980
25 - 29	4	4.1696	-	-
30 - 34	4	3.5644	4	3.6636
35 - 39	7	8.1074	3	3.4293
40 - 44	16	16.3072	20	20.2040
45 - 49	44	42.9000	71	69.7646
50 - 54	74	67.2438	119	114.8469
55 - 59	124	119.0276	194	185.6968
60 - 64	175	171.7275	291	281.7462
65 - 69	256	259.2512	367	356.5405
70 - 74	331	341.7244	471	460.5909
75 - 79	354	348.5658	529	491.1236
80 - 84	229	206.1916	331	303.2953
85 +	107	96.5354	207	188.5356
All ages	1732	1686.7792	2614	2486.8193
Age Groups				
35 - 49	67	67.3146	94	93.3979
50 - 64	373	357.9989	604	582.2899
Rates per million				
35 - 49	133.260	127.984	174.625	166.566
50 - 64	987.580	1003.822	1323.879	1324.819
All ages	710.898	691.667	980.026	933.581

TABLE 13.

Mortality from Cerebral Haemorrhage (331) Scotland 1955
Standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.2784	-	-
5 - 9	-	"	1	0.8867
10 - 14	1	0.9962	-	-
15 - 19	-	-	-	-
20 - 24	2	2.1914	3	3.2010
25 - 29	3	3.1569	2	2.1126
30 - 34	3	2.7585	2	1.9026
35 - 39	6	6.7710	8	8.9632
40 - 44	15	15.3855	22	22.1848
45 - 49	35	34.1005	53	52.1520
50 - 54	80	71.6560	112	107.4304
55 - 59	122	113.1672	183	172.1115
60 - 64	186	179.6202	249	235.9773
65 - 69	282	289.2192	366	356.7402
70 - 74	333	347.6520	470	455.1010
75 - 79	343	335.5912	448	414.8480
80 - 84	197	170.4838	322	291.0976
85 +	199	182.3039	210	191.3100
All ages	1810	1758.3519	2451	2316.0189
Age Groups				
35 - 49	56	56.2570	83	83.3000
50 - 64	388	364.4434	544	515.5192
Rates per million				
35 - 49	110.718	106.960	153.213	148.557
50 - 64	1005.775	1021.892	1175.375	1172.903
All ages	470.058	721.007	917.926	869.461

TABLE 14.

Mortality from Cerebral Haemorrhage (331) Scotland 1956
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0934	-	-
5 - 9	-	-	1	0.8781
10 - 14	-	-	2	1.9802
15 - 19	3	3.0960	2	2.0760
20 - 24	-	-	-	-
25 - 29	5	5.3325	1	1.0676
30 - 34	5	4.6925	3	2.9313
35 - 39	5	5.4645	9	9.7947
40 - 44	20	21.1880	11	11.3861
45 - 49	39	37.8300	59	57.7669
50 - 54	74	65.8600	106	101.7600
55 - 59	132	116.9652	176	161.5504
60 - 64	191	183.8757	232	217.8016
65 - 69	274	281.0418	341	329.0991
70 - 74	321	337.0500	476	454.6752
75 - 79	336	332.3712	465	426.9165
80 - 84	248	208.2952	340	287.6400
85 +	86	75.0866	204	182.0700
All ages	1740	1679.1826	2428	2249.3937
Age Groups				
35 - 49	64	64.4825	79	78.9477
50 - 64	397	366.7009	514	481.1120
Rates per million				
35 - 49	126.467	122.599	145.548	140.795
50 - 64	1010.304	1028.222	1098.852	1094.621
All ages	711.374	688.552	908.015	844.449

TABLE 15.

Mortality from Cerebral Haemorrhage (331) Scotland 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0752	-	-
5 - 9	1	0.9126	1	0.9249
10 - 14	2	1.8402	2	1.8610
15 - 19	1	1.0240	1	1.0424
20 - 24	-	-	1	1.1012
25 - 29	-	-	2	2.1648
30 - 34	3	2.8932	3	3.0075
35 - 39	8	8.4448	6	6.3426
40 - 44	15	16.5780	21	22.5036
45 - 49	38	36.8980	52	50.9288
50 - 54	76	67.3208	90	86.1660
55 - 59	140	119.6860	174	157.7658
60 - 64	152	144.7952	225	207.6075
65 - 69	229	233.1907	306	292.0464
70 - 74	307	324.7446	425	401.5825
75 - 79	274	271.0408	449	405.1327
80 - 84	226	185.2522	326	265.1684
85 +	93	77.0505	209	180.6178
All ages	1566	1492.7468	2293	2085.9639
Age Groups				
35 - 49	61	61.9208	79	79.7750
50 - 64	368	331.8020	489	451.5393
Rates per million				
35 - 49	120.913	117.729	145.867	142.271
50 - 64	920.969	930.366	1034.802	1027.337
All ages	639.659	612.104	856.713	783.095

TABLE 16.

Mortality from Cerebral Haemorrhage (331) Scotland 1958
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	5.2775	2	2.1070
5 - 9	1	0.9355	-	-
10 - 14	1	0.8914	3	2.7165
15 - 19	-	-	1	1.0321
20 - 24	1	1.1188	2	2.2030
25 - 29	4	4.3872	4	4.4016
30 - 34	3	2.9328	4	4.0716
35 - 39	4	4.0704	10	10.2700
40 - 44	14	16.3660	23	25.9141
45 - 49	44	43.0980	51	50.1738
50 - 54	93	81.8679	127	120.8024
55 - 59	134	110.2820	154	137.6144
60 - 64	152	144.0352	222	202.6860
65 - 69	238	238.0785	304	286.1552
70 - 74	296	315.9208	452	423.2076
75 - 79	308	309.5092	469	420.5054
80 - 84	204	166.3212	372	297.3768
85 +	96	77.4528	203	171.0884
All ages	1595	1522.5452	2403	2162.3259
Age Groups				
35 - 49	62	63.5344	84	86.0579
50 - 64	379	336.1851	503	461.1028
Rates per million				
35 - 49	123.915	120.797	156.331	154.011
50 - 64	932.609	942.656	1053.392	1049.096
All ages	648.507	624.322	896.087	811.763

TABLE 17.

Mortality from Cerebral Haemorrhage (331) Scotland 1959
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	2.0734	2	2.0674
5 - 9	-	-	-	-
10 - 14	2	1.7494	2	2.0870
15 - 19	-	-	-	-
20 - 24	-	-	2	2.1920
25 - 29	-	-	3	3.3516
30 - 34	3	2.9754	3	3.1305
35 - 39	13	12.7517	11	11.0264
40 - 44	14	17.2088	19	22.4846
45 - 49	29	28.8057	42	41.5716
50 - 54	63	54.7785	101	95.1319
55 - 59	124	99.5472	175	154.6825
60 - 64	191	176.8851	235	211.1005
65 - 69	211	224.0277	340	316.6760
70 - 74	279	299.5344	400	369.8000
75 - 79	315	321.5520	443	395.0674
80 - 84	223	183.1053	358	282.8200
85 +	117	92.4768	197	161.9931
All ages	1586	1517.4714	2333	2075.1825
Age Groups				
35 - 49	56	58.7662	72	75.0826
50 - 64	378	331.2108	511	460.9149
Rates per million				
35 - 49	112.703	111.731	135.177	133.902
50 - 64	912.290	928.708	1057.284	1048.668
All ages	641.457	622.242	867.246	779.048

TABLE 18.

Mortality from Cerebral Haemorrhage (331) Scotland 1960
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	5.0950	2	2.0366
5 - 9	1	0.9531	1	0.9626
10 - 14	1	0.8585	1	0.8772
15 - 19	1	0.9338	-	-
20 - 24	2	2.1940	-	-
25 - 29	1	1.1266	2	2.2748
30 - 34	4	4.0360	2	2.0966
35 - 39	6	6.0882	5	5.2175
40 - 44	14	16.8476	23	26.7628
45 - 49	35	35.0945	45	44.5140
50 - 54	98	85.2894	90	84.8790
55 - 59	141	111.2631	137	120.1627
60 - 64	181	161.8321	210	185.6610
65 - 69	245	244.2405	316	286.9280
70 - 74	263	285.2235	390	360.2040
75 - 79	312	321.5160	428	375.1420
80 - 84	226	184.8454	331	258.1800
85 +	91	66.1843	221	168.8882
All ages	1627	1533.6216	2204	1924.7870
Age Groups				
35 - 49	155	58.0303	73	76.4943
50 - 64	420	358.3846	437	390.7027
Rates per million				
35 - 49	111.691	110.332	138.246	136.420
50 - 64	998.877	1004.903	897.987	888.922
All ages	655.602	628.865	817.517	722.588

TABLE 19.

Morbality from Cerebral Haemorrhage (331) Scotland 1961
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.0198	1	1.0033
5 - 9	1	0.9477	1	0.9556
10 - 14	2	1.7018	1	0.8708
15 - 19	1	0.9175	-	-
20 - 24	3	3.2589	-	-
25 - 29	-	-	4	4.6476
30 - 34	2	2.0640	2	2.1238
35 - 39	6	6.2484	12	12.9216
40 - 44	19	22.2300	15	16.9920
45 - 49	44	45.6632	45	45.8100
50 - 54	71	61.5570	88	82.5440
55 - 59	115	90.2060	156	136.9056
60 - 64	176	151.5360	212	183.6768
65 - 69	224	222.4320	339	304.4898
70 - 74	239	259.3867	429	391.1622
75 - 79	266	276.8262	430	371.5200
80 - 84	189	156.0951	350	269.9900
85 +	111	782.994	228	168.2868
All ages	1472	1382.3897	2313	1993.8999
Age Groups				
35 - 49	69	74.1416	72	75.7236
50 - 64	362	303.29 0	456	403.1264
Rates per million				
35 - 49	141.813	140.964	138.011	135.045
50 - 64	849.357	850.444	929.793	917.189
All ages	592.284	566.851	857.129	748.533

TABLE 20.

Mortality from Cerebral Haemorrhage (331) Scotland 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.9901	3	2.9688
5 - 9	-	-	2	1.8832
10 - 14	1	0.8957	1	0.9174
15 - 19	1	0.8584	3	2.8329
20 - 24	-	-	1	1.1078
25 - 29	5	5.8210	2	2.3448
30 - 34	1	1.0386	4	4.2952
35 - 39	5	5.5035	3	3.3108
40 - 44	13	14.6354	16	17.5968
45 - 49	29	31.3084	38	40.0710
50 - 54	74	64.2542	63	59.2263
55 - 59	127	99.0219	133	116.4947
60 - 64	205	170.2525	201	172.0359
65 - 69	211	207.4130	266	235.3834
70 - 74	254	275.9456	403	364.1508
75 - 79	288	305.1936	448	383.3984
80 - 84	189	158.1363	323	245.3508
85 +	104	71.7496	188	135.8112
All ages	1508	1413.0178	2098	1789.1802
Age Groups				
35 - 49	47	51.4473	57	60.9786
50 - 64	406	333.5286	397	347.7569
Rates per million				
35 - 49	97.534	97.816	110.397	108.749
50 - 64	941.954	935.207	806.653	791.213
All ages	604.514	579.411	776.329	671.679

TABLE 21.

Mortality from Cerebral Haemorrhage (331) Scotland 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	3.9200	-	-
5 - 9	1	0.9175	1	0.9255
10 - 14	1	0.9210	-	-
15 - 19	-	-	1	0.9210
20 - 24	2	2.0826	-	-
25 - 29	2	2.3474	3	3.5292
30 - 34	2	2.1058	1	1.0916
35 - 39	11	11.9680	9	10.1133
40 - 44	14	15.2236	20	21.4140
45 - 49	30	34.2540	40	44.4000
50 - 54	59	51.6132	87	82.2237
55 - 59	125	97.0375	137	119.2585
60 - 64	177	141.0690	229	193.1386
65 - 69	239	235.1521	310	271.6220
70 - 74	296	320.3016	403	358.6700
75 - 79	274	292.7964	431	363.4623
80 - 84	205	175.8490	329	248.3950
85 +	114	78.3180	215	150.6720
All ages	1556	1465.8767	2216	1869.8367
Age Groups				
35 - 49	55	61.4456	69	75.9273
50 - 64	361	289.7197	453	394.6203
Rates per million				
35 - 49	115.499	116.825	135.464	135.409
50 - 64	829.071	812.368	916.182	897.837
All ages	622.565	601.035	819.174	701.959

TABLE 22.

Mortality from Cerebral Haemorrhage (331) Scotland 1964
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	4.8775	2	1.9508
5 - 9	2	1.8066	1	0.9117
10 - 14	2	1.8764	3	2.8695
15 - 19	1	0.8199	1	0.9082
20 - 24	-	-	1	1.0987
25 - 29	2	2.3816	2	2.3622
30 - 34	5	5.3525	-	-
35 - 39	6	6.6648	5	5.7145
40 - 44	24	25.2336	23	24.1385
45 - 49	32	38.5568	36	42.1128
50 - 54	71	63.1190	83	79.1073
55 - 59	154	118.2874	125	108.0375
60 - 64	219	170.2725	214	178.6686
65 - 69	265	255.4865	347	299.3569
70 - 74	345	374.4285	474	416.4564
75 - 79	298	318.6812	522	429.5016
80 - 84	214	184.0400	427	315.3395
85 +	168	113.5512	277	185.2299
All ages	1813	1685.4360	2543	2093.7646
Age Groups				
35 - 49	62	70.4552	64	71.9658
50 - 64	444	351.6789	422	365.8134
Rates per million				
35 - 49	131.691	133.955	127.541	128.344
50 - 64	1014.857	986.100	851.321	832.294
All ages	725.287	691.116	939.520	786.024

TABLE 23.

Mortality from Cerebral Haemorrhage (331) Scotland 1965
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.9688	2	1.9436
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	1	0.8961
20 - 24	-	-	-	-
25 - 29	1	1.1978	5	5.9495
30 - 34	3	3.2790	4	4.5388
35 - 39	6	6.7974	12	13.9080
40 - 44	15	16.3815	19	20.8126
45 - 49	32	37.8560	39	44.9514
50 - 54	63	56.4984	66	62.9376
55 - 59	133	102.4233	131	113.6294
60 - 64	201	154.2072	228	188.9892
65 - 69	255	238.6290	343	291.5157
70 - 74	289	310.0681	478	408.6900
75 - 79	286	313.0556	525	432.6000
80 - 84	215	185.7815	437	313.6349
85 +	137	91.6530	310	200.3840
All ages	1637	1518.7966	2600	2105.3808
Age Groups				
35 - 49	53	61.0349	70	79.6720
50 - 64	397	313.1289	425	365.5562
Rates per million				
35 - 49	114.249	116.045	141.643	142.087
50 - 64	907.6366	878.007	856.682	831.709
All ages	655.534	622.785	960.579	790.385

TABLE 24.

Mortality from Cerebral Haemorrhage (331) Scotland 1966 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	2	1.9624
5 - 9	2	1.7546	-	-
10 - 14	-	-	-	-
15 - 19	2	1.6054	1	0.8914
20 - 24	1	1.0108	3	3.2661
25 - 29	1	1.2182	2	2.4262
30 - 34	2	2.2698	5	5.8355
35 - 39	9	10.4373	7	8.2698
40 - 44	16	17.9968	15	16.9680
45 - 49	32	37.8560	27	30.3102
50 - 54	82	75.9930	92	90.4268
55 - 59	120	91.8720	164	141.4828
60 - 64	218	165.9416	206	170.8564
65 - 69	278	250.0054	346	287.7682
70 - 74	310	332.5990	488	412.7016
75 - 79	323	354.4925	570	461.5860
80 - 84	241	212.3451	456	319.9296
85 +	158	105.7020	340	214.6760
All ages	1795	1663.0995	2724	2169.3570
Age Groups				
35 - 49	57	66.2901	49	55.5480
50 - 64	420	333.7866	462	402.7660
Rates per million				
35 - 49	124.156	126.036	100.041	99.064
50 - 64	967.296	935.931	939.597	916.369
All ages	720.912	681.957	1008.555	814.402

TABLE 25.

Mortality from Cerebral Embolism (332) Scotland 1947
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	1.0862
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	2	1.6906	1	0.9575
20 - 24	1	0.8481	1	0.9733
25 - 29	1	0.9730	2	1.9864
30 - 34	2	1.8370	7	6.5611
35 - 39	1	0.9257	2	1.9084
40 - 44	7	7.0959	7	7.0588
45 - 49	10	10.7050	11	11.2233
50 - 54	24	26.7312	30	31.8990
55 - 59	40	40.9360	60	61.9380
60 - 64	82	80.7700	98	99.0094
65 - 69	171	164.7756	199	201.4278
70 - 74	258	256.5810	287	296.2701
75 - 79	238	265.7744	344	381.9776
80 - 84	174	191.7828	289	298.1324
85 +	95	112.6795	205	231.8550
All ages	1106	1164.1060	1544	1634.2643
Age Groups				
35 - 49	18	18.7266	20	20.1905
50 - 64	146	148.4372	188	192.8464
Rates per million				
35 - 49	34.183	35.605	35.422	36.008
50 - 64	428.281	416.187	443.670	438.762
All ages	446.655	477.344	584.119	613.522

TABLE 26.

Mortality from Cerebral Embolism (332) Scotland 1948
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	2.1258	1	1.0531
5 - 9	-	-	-	-
10 - 14	-	-	1	0.9965
15 - 19	-	-	-	-
20 - 24	1	0.8456	-	-
25 - 29	2	1.8630	-	-
30 - 34	1	0.9665	2	1.9810
35 - 39	5	4.6150	1	0.9603
40 - 44	5	5.0010	8	8.0272
45 - 49	10	10.2890	9	9.0549
50 - 54	24	26.4792	44	46.4596
55 - 59	57	57.6783	55	56.2595
60 - 64	80	78.6320	108	108.4104
65 - 69	156	152.3340	188	189.9552
70 - 74	248	243.0152	287	290.1857
75 - 79	242	261.7472	307	332.9108
80 - 84	156	164.6112	266	267.4098
85 +	85	93.8825	179	192.2281
All ages	1074	1104.0855	1456	1505.8921
Age Groups				
35 - 49	20	19.9050	18	18.0424
50 - 64	161	162.7895	207	211.1295
Rates per million				
35 - 49	37.322	37.845	31.756	32.177
50 - 64	468.524	456.458	484.831	480.359
All ages	430.267	452.732	548.628	565.330

TABLE 27.

Mortality from Cerebral Embolism (332) Scotland 1949 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	1.0325
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.8691	-	-
20 - 24	1	0.8607	1	0.9949
25 - 29	-	-	2	1.8826
30 - 34	1	1.0201	4	4.1988
35 - 39	2	1.9318	5	4.8490
40 - 44	6	5.9280	9	8.9694
45 - 49	21	21.1617	11	11.0055
50 - 54	26	28.0618	28	29.2432
55 - 59	50	50.5650	49	50.0486
60 - 64	139	137.1096	120	119.9520
65 - 69	181	178.7194	228	231.4200
70 - 74	272	266.6144	346	345.7924
75 - 79	279	293.3406	413	436.7475
80 - 84	205	213.1795	344	345.0320
85 +	90	95.5530	222	226.9728
All ages	1274	1294.9147	1783	1818.1412
Age Groups				
35 - 49	29	29.0215	25	24.8239
50 - 64	215	215.7364	197	199.2438
Rates per million				
35 - 49	53.772	55.178	44.077	44.271
50 - 64	621.010	604.920	458.750	453.317
All ages	509.410	530.982	671.581	682.552

TABLE 28.

Mortality from Cerebral Embolism (332) Scotland 1950 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	1	0.9917
15 - 19	-	-	-	-
20 - 24	2	1.7476	1	0.9960
25 - 29	-	-	2	1.9464
30 - 34	1	0.9952	2	2.0564
35 - 39	1	0.9661	2	1.9398
40 - 44	2	1.9762	7	7.0063
45 - 49	9	8.9496	21	20.9097
50 - 54	23	23.9591	34	34.8976
55 - 59	65	64.7400	70	70.2520
60 - 64	131	130.3712	122	122.7076
65 - 69	212	210.6432	217	218.8445
70 - 74	347	341.6215	406	404.3354
75 - 79	393	399.1308	522	532.9098
80 - 84	273	276.0030	400	398.8400
85 *	167	169.3213	288	286.0704
All ages	1626	1630.4248	2095	2104.7036
Age Groups				
35 - 49	12	11.8919	30	29.8558
50 - 64	219	219.0703	226	227.8572
Rates per million				
35 - 49	22.222	22.661	52.890	53.245
50 - 64	642.421	614.269	520.751	518.418
All ages	648.949	668.559	786.922	790.130

TABLE 29.

Mortality from Cerebral Embolism (ø32) Scotland 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	1
10 - 14	1	1	-	-
15 - 19	-	-	1	1
20 - 24	-	-	-	-
25 - 29	1	1	1	1
30 - 34	2	2	-	-
35 - 39	2	2	5	5
40 - 44	6	6	10	10
45 - 49	18	18	10	10
50 - 54	26	26	42	42
55 - 59	72	72	94	94
60 - 64	135	135	148	148
65 - 69	235	235	266	266
70 - 74	357	357	430	430
75 - 79	409	409	576	576
80 - 84	304	304	398	398
85 +	140	140	296	296
All ages	1708	1708	2278	2278
Age Groups				
35 - 49	26	26	25	25
50 - 64	233	233	284	284
Rates per million				
35 - 49	49.433	49.433	44.585	44.585
50 - 64	653.327	653.327	646.154	646.154
All ages	700.369	700.369	855.188	855.188

TABLE 30.

Morality from Cerebral Embolism (332) Scotland 1952
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0523	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	2	2.0176
25 - 29	-	-	2	2.0456
30 - 34	2	1.9208	2	1.9388
35 - 39	1	1.0395	1	1.0337
40 - 44	2	1.9948	8	7.9848
45 - 49	12	11.9640	11	10.9890
50 - 54	30	28.9500	47	46.4642
55 - 59	64	63.4880	79	77.7202
60 - 64	143	142.0848	123	121.9545
65 - 69	242	243.5730	306	304.0110
70 - 74	333	335.0313	432	427.8096
75 - 79	437	428.6970	523	505.6887
80 - 84	299	291.4652	433	425.6390
85 +	139	133.0925	350	337.6100
All ages	1705	1684.3532	2319	2272.9067
Age Groups				
35 - 49	15	14.9983	20	20.0075
50 - 64	237	234.5228	249	246.1389
Rates per million				
35 - 49	28.833	28.516	36.030	35.681
50 - 64	652.213	657.597	559.622	560.012
All ages	699.692	690.672	870.476	853.276

TABLE 31.

Mortality from Cerebral Embolism (332) Scotland 1953 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	2.1592	1	1.0815
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	1	1.0514	1	1.0292
25 - 29	-	-	-	-
30 - 34	2	1.8454	2	1.8664
35 - 39	1	1.0982	3	3.2613
40 - 44	6	6.0294	15	15.0540
45 - 49	15	14.8290	19	18.8613
50 - 54	30	27.9030	44	42.8560
55 - 59	76	74.7536	55	53.5590
60 - 64	112	110.3536	154	150.5504
65 - 69	214	215.8404	237	233.0895
70 - 74	339	346.3224	399	392.9352
75 - 79	391	379.9347	562	530.5280
80 - 84	311	293.0553	432	412.0416
85 +	140	129.0380	287	268.5172
All ages	1640	1604.2136	2211	2125.2306
Age Groups				
35 - 49	22	21.9566	37	37.1766
50 - 64	218	213.0102	253	246.9654
Rates per million				
35 - 49	43.030	41.746	67.741	66.301
50 - 64	587.991	597.276	561.231	561.893
All ages	673.272	657.811	829.973	797.837

TABLE 32.

Mortality from Cerebral Embolism (332) Scotland 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0934	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	1	1.0740	1	1.0490
25 - 29	-	-	3	3.1440
30 - 34	2	1.7822	4	3.6636
35 - 39	-	-	2	2.2862
40 - 44	5	5.0960	13	13.1326
45 - 49	12	11.7000	18	17.6868
50 - 54	33	29.9871	51	49.2201
55 - 59	74	71.0326	51	54.5604
60 - 64	136	133.4568	168	162.6576
65 - 69	224	226.8448	253	245.7895
70 - 74	368	379.9232	482	471.3478
75 - 79	444	429.6588	585	543.1140
80 - 84	366	329.5464	518	474.6434
85 +	160	144.3520	348	316.9584
All ages	1826	1765.5473	2503	2359.2534
Age Groups				
35 - 49	17	16.7960	33	33.1056
50 - 64	243	234.4765	276	266.4381
Rates per million				
35 - 49	33.812	31.934	61.305	59.040
50 - 64	643.383	657.467	604.951	606.197
All ages	749.480	723.966	940.526	885.691

TABLE 33.

Mortality from Cerebral Embolism (332) Scotland 1955
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	-	-
25 - 29	-	-	-	-
30 - 34	-	-	1	0.9513
35 - 39	1	1.1285	1	1.1204
40 - 44	5	5.1285	6	6.0504
45 - 49	18	17.5374	17	16.7280
50 - 54	31	27.7667	40	38.3680
55 - 59	83	76.9908	72	67.7160
60 - 64	129	124.5753	165	156.3705
65 - 69	222	227.6832	279	271.9413
70 - 74	393	410.2920	493	477.3719
75 - 79	445	435.3880	639	591.7140
80 - 84	366	290.7744	550	482.2400
85 +	195	178.6395	392	357.1120
All ages	1888	1795.9043	2655	2467.6838
Age Groups				
35 - 49	24	23.7944	24	23.8988
50 - 64	243	229.3328	277	262.4545
Rates per million				
35 - 49	47.451	45.240	44.303	42.621
50 - 64	629.906	643.044	598.491	597.133
All ages	773.394	736.414	994.327	926.397

TABLE 34

Mortality from Cerebral Embolism (332) Scotland 1956
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	1.0893
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	1.0320	-	-
20 - 24	-	-	-	-
25 - 29	-	-	-	-
30 - 34	2	2.8155	3	2.9313.
35 - 39	-	-	2	2.1766
40 - 44	3	3.1782	7	7.2457
45 - 49	17	16.4900	20	19.5820
50 - 54	34	30.2600	33	31.6800
55 - 59	83	73.5463	68	62.4172
60 - 64	128	123.2256	153	143.6364
65 - 69	228	233.8596	281	271.1931
70 - 74	371	389.5500	453	432.7056
75 - 79	434	429.3128	657	603.1917
80 - 84	385	323.3615	578	488.9880
85 +	196	171.1276	403	359.6775
All ages	1882	1797.7591	2659	2426.5144
Age Groups				
35 - 49	20	19.6682	29	29.0043
50 - 64	245	227.0319	254	237.7336
Rates per million				
35 - 49	39.521	37.395	53.429	51.726
50 - 64	623.487	636.593	543.012	540.889
All ages	769.429	737.174	994.403	910.942

TABLE 35.

Mortality from Cerebral Embolism (332) Scotland 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	1.0736
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	1	1.1012
25 - 29	1	1.0836	-	-
30 - 34	1	0.9644	3	3.0075
35 - 39	1	1.0556	3	3.1713
40 - 44	3	3.3156	4	4.2864
45 - 49	15	14.5650	16	15.2864
50 - 54	41	36.3178	44	42.1256
55 - 59	107	91.4743	59	53.4953
60 - 64	128	121.9328	161	148.5547
65 - 69	258	262.7214	286	255.7792
70 - 74	369	390.3282	469	443.1581
75 - 79	504	498.5568	651	587.3973
80 - 84	399	327.0603	584	475.0256
85 +	229	189.7265	444	383.7048
All ages	2056	1939.1023	2726	2417.1670
Age Groups				
35 - 49	19	18.9362	23	23.1281
50 - 64	276	249.7249	264	244.1756
Rates per million				
35 - 49	37.661	36.003	42.469	41.247
50 - 64	690.727	700.223	558.666	555.546
All ages	839.808	795.132	1018.491	907.433

TABLE 36.

Mortality from Cerebral Embolism (332) Scotland 1958
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0555	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.9871	-	-
20 - 24	-	-	-	-
25 - 29	-	-	1	1.0968
30 - 34	-	-	3	3.0537
35 - 39	5	5.0880	5	5.1350
40 - 44	4	4.6760	7	7.8869
45 - 49	13	12.7335	15	14.7570
50 - 54	29	25.5287	44	41.8528
55 - 59	86	70.7780	85	75.9560
60 - 64	142	134.5592	165	150.6450
65 - 69	265	268.4715	264	248.5032
70 - 74	345	368.2185	531	497.1753
75 - 79	492	494.4108	623	558.5818
80 - 84	426	347.3178	629	502.8226
85 +	230	185.5640	462	389.3736
All ages	2039	1919.3886	2834	2496.8397
Age Groups				
35 - 49	22	22.4975	27	27.7789
50 - 64	257	230.8659	294	268.4538
Rates per million				
35 - 49	43.970	42.774	50.249	49.541
50 - 64	632.402	647.343	615.700	610.783
All ages	829.032	787.049	1056.808	937.343

TABLE 37.

Mortality from Cerebral Embolism (332) Scotland 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.9466	-	-
20 - 24	-	-	-	-
25 - 29	-	-	-	-
30 - 34	-	-	1	1.0435
35 - 39	-	-	6	6.0144
40 - 44	3	3.6876	11	13.0174
45 - 49	15	14.8995	15	14.8470
50 - 54	34	29.5630	40	37.6760
55 - 59	82	65.8296	75	66.2925
60 - 64	124	114.8364	165	148.2195
65 - 69	237	240.2469	287	267.3118
70 - 74	377	361.8032	472	436.3640
75 - 79	472	481.8176	671	598.3978
80 - 84	393	322.6923	622	491.3800
85 +	230	181.7920	470	386.4810
All ages	1968	1818.1147	2835	2467.0449
Age Groups.				
35 - 49	18	18.5871	32	33.8788
50 - 64	240	210.2290	280	252.1880
Rates per million				
35 - 49	36.226	35.339	60.079	60.419
50 - 64	579.232	589.478	579.334	573.775
All ages	795.956	745.521	1053.854	926.158

TABLE 38.

Mortality from Cerebral Embolism (332) Scotland 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	2.0380	2	2.0366
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	2	2.0310
20 - 24	-	-	-	-
25 - 29	-	-	1	1.1374
30 - 34	1	1.0090	-	-
35 - 39	1	1.0147	5	5.2175
40 - 44	5	6.0170	9	10.4724
45 - 49	16	16.0432	16	15.8272
50 - 54	37	32.2011	34	32.0654
55 - 59	82	64.7062	76	66.6596
60 - 64	151	135.0091	136	120.2376
65 - 69	249	248.2281	282	256.0560
70 - 74	388	366.5610	460	424.8560
75 - 79	425	437.9625	620	543.4300
80 - 84	398	325.5248	635	495.3000
85 +	243	176.7339	552	421.8384
All ages	1998	1813.0480	2830	2397.1651
Age Groups				
35 - 49	22	23.0749	30	31.5171
50 - 64	270	231.9164	246	218.9626
Rates per million				
35 - 49	44.676	43.872	56.813	56.208
50 - 64	642.136	650.289	505.503	498.181
All ages	805.097	743.444	1049.715	899.924

TABLE 39.

Mortality from Cerebral Embolism (332) Scotland 1961
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	0.8509	-	-
15 - 19	-	-	-	-
20 - 24	1	1.0863	-	-
25 - 29	-	-	1	1.1619
30 - 34	-	-	-	-
35 - 39	-	-	2	2.1536
40 - 44	2	2.3400	7	7.9296
45 - 49	16	16.6048	15	15.2700
50 - 54	29	25.1430	30	28.1400
55 - 59	81	63.5364	68	59.6768
60 - 64	163	140.3430	144	124.7616
65 - 69	239	237.3270	269	241.6158
70 - 74	346	375.5138	480	437.6640
75 - 79	431	448.5417	642	554.6880
80 - 84	434	358.4406	614	473.6396
85 +	270	190.4580	502	370.5262
All ages	2013	1860.1855	2774	2317.2271
Age Groups				
35 - 49	18	18.9448	24	25.3532
50 - 64	273	229.0224	242	212.5784
Rates per million				
35 - 49	36.995	36.019	46.004	45.215
50 - 64	640.537	642.174	493.443	483.656
All ages	809.965	762.772	1027.962	869.914

TABLE 40.

Mortality from Cerebral Embolism (332) Scotland 1962
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	1	0.9901	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	-	-
25 - 29	-	-	-	-
30 - 34	1	1.0386	-	-
35 - 39	2	2.2014	4	4.4144
40 - 44	6	6.7548	7	7.6986
45 - 49	18	19.4328	7	7.3815
50 - 54	24	20.8392	33	31.0233
55 - 59	77	60.0369	73	63.9407
60 - 64	154	127.8970	140	119.8260
65 - 69	223	219.2090	294	260.1606
70 - 74	347	376.9808	459	414.7524
75 - 79	415	439.7755	689	589.6462
80 - 84	415	347.2305	631	479.3076
85 +	236	162.8164	507	366.2568
All ages	1919	1785.2030	2844	2344.4081
Age Groups				
35 - 49	26	28.3890	18	19.4945
50 - 64	255	208.7731	246	214.7900
Rates per million				
35 - 49	53.955	53.975	34.862	34.766
50 - 64	591.621	585.395	499.840	488.688
All ages	769.272	732.026	1052.374	880.118

TABLE 41.

Mortality from Cerebral Embolism (332) Scotland 1963
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.9800	-	-
5 - 9	-	-	-	-
10 - 14	1	0.9210	-	-
15 - 19	-	-	-	-
20 - 24	1	1.0413	-	-
25 - 29	1	1.1737	-	-
30 - 34	-	-	4	4.3664
35 - 39	3	3.2640	3	3.3711
40 - 44	7	7.6118	14	14.9898
45 - 49	12	13.7016	10	11.1000
50 - 54	32	27.9936	28	26.4628
55 - 59	61	47.3543	63	54.8415
60 - 64	142	113.1740	171	144.2214
65 - 69	227	223.3453	265	232.1930
70 - 74	317	343.0257	402	357.7800
75 - 79	434	463.7724	603	508.5099
80 - 84	415	355.9870	664	501.3200
85 +	253	173.8110	512	358.8096
All ages	1907	1777.1567	2739	2217.9655
Age Groups				
35 - 49	22	24.5774	27	29.4609
50 - 64	235	188.5219	262	225.5257
Rates per million				
35 - 49	46.200	46.729	53.008	52.541
50 - 64	539.700	528.612	529.889	513.114
All ages	763.003	728.726	1012.508	832.650

TABLE 42.

Mortality from Cerebral Embolism (332) Scotland 1964
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.9755	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	-	-
25 - 29	-	-	-	-
30 - 34	2	2.1410	3	3.3366
35 - 39	2	2.2216	3	3.4287
40 - 44	9	9.4626	4	4.1980
45 - 49	8	9.6392	8	9.3584
50 - 54	34	30.2260	29	27.6399
55 - 59	74	56.8394	59	50.9937
60 - 64	155	120.5125	120	100.1880
65 - 69	257	247.7737	274	236.3798
70 - 74	323	350.5519	395	347.0470
75 - 79	371	396.7474	600	493.6800
80 - 84	352	302.7200	589	434.9765
85 +	256	173.0304	532	355.7484
All ages	1844	1702.8412	2616	2066.9750
Age Groups				
35 - 49	19	21.3234	15	16.9851
50 - 64	263	207.5779	208	178.8216
Rates per million				
35 - 49	40.357	40.542	29.892	30.291
50 - 64	601.143	582.044	419.609	406.853
All ages	737.689	698.253	966.491	775.967

TABLE 43.

Mortality from Cerebral Embolism (332) Scotland 1965
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	0.9718
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.8076	-	-
20 - 24	-	-	-	-
25 - 29	1	1.1978	-	-
30 - 34	1	1.0930	2	2.2694
35 - 39	3	3.3987	3	3.3770
40 - 44	7	7.6447	4	4.3816
45 - 49	11	13.0130	18	20.7468
50 - 54	22	19.7296	18	17.1648
55 - 59	72	55.4472	70	60.7180
60 - 64	155	188.9160	132	109.4148
65 - 69	238	222.7204	265	225.2235
70 - 74	357	383.0253	465	397.5750
75 - 79	410	448.7860	621	511.7040
80 - 84	372	321.4452	643	461.4811
85 +	313	209.3970	632	408.5248
All ages	-963	1806.6215	2874	2223.6526
Age Groups				
35 - 49	21	24.0564	25	28.6054
50 - 64	249	194.6235	220	187.2976
Rates per million				
35 - 49	45.268	45.738	50.587	51.015
50 - 64	569.273	544.232	443.459	426.137
All ages	786.080	740.808	1061.810	834.785

TABLE 44.

Mortality from Cerebral Embolism (332) Scotland 1966
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	2	1.9524	1	0.9812
5 - 9	1	0.8773	-	-
10 - 14	-	-	-	-
15 - 19	1	0.8027	-	-
20 - 24	-	-	1	1.0887
25 - 29	-	-	-	-
30 - 34	1	1.1349	-	-
35 - 39	4	4.6388	4	4.7256
40 - 44	4	4.4992	3	3.3936
45 - 49	5	5.9150	9	10.1034
50 - 54	29	26.8685	28	27.5212
55 - 59	72	55.1232	62	53.4874
60 - 64	146	111.1352	128	106.1632
65 - 69	210	188.8530	222	184.6374
70 - 74	294	315.4326	403	340.8171
75 - 79	359	372.4625	542	438.9116
80 - 84	328	289.0008	621	435.6936
85 +	275	183.9750	629	397.1506
All ages	1731	1562.6711	2653	2004.6746
Age Groups				
35 - 49	13	15.0530	16	18.2226
50 - 64	247	193.1269	218	187.1718
Rates per million				
35 - 49	28.316	28.620	32.666	32.498
50 - 64	56.8862	541.524	443.360	425.851
All ages	695.209	640.776	982.265	752.578

TABLE 45.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1950 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	2	1.7670	2	1.9776
20 - 24	3	2.6214	2	1.9920
25 - 29	2	1.8630	3	2.9732
30 - 34	2	1.9904	4	4.1128
35 - 39	1	0.9661	8	7.7592
40 - 44	3	2.9643	3	3.0027
45 - 49	4	3.9776	6	5.9742
50 - 54	7	7.2919	12	12.3168
55 - 59	6	5.9760	11	11.0396
60 - 64	7	6.9664	7	7.0406
65 - 69	2	1.9872	8	8.0680
70 - 74	2	1.9690	8	7.9672
75 - 79	3	3.0468	4	4.0836
80 - 84	1	1.0110	4	3.9971
85 +	-	-	1	0.9933
All ages	45	44.3981	83	83.2979
Age Groups				
35 - 49	8	7.9080	17	16.7361
50 - 64	20	20.2343	30	30.3970
Rates ped million				
35 - 49	14.815	15.035	29.971	29.847
50 - 64	56.842	56.737	69.126	69.159
All ages	17.960	18.206	31.1764	31.271

TABLE 46.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1	-	-
5 - 9	1	1	-	-
10 - 14	-	-	-	-
15 - 19	-	-	2	2
20 - 24	4	4	1	1
25 - 29	5	5	-	-
30 - 34	2	2	2	2
35 - 39	2	2	3	3
40 - 44	5	5	9	9
45 - 49	10	10	9	9
50 - 54	11	11	12	12
55 - 59	11	11	6	6
60 - 64	8	8	13	13
65 - 69	6	6	12	12
70 - 74	2	2	7	7
75 - 79	3	3	10	10
80 - 84	1	1	4	4
85 +	-	-	3	3
All ages	72	72	93	93
Age Groups				
35 - 49	17	17	21	21
50 - 64	30	30	31	31
Rates per million				
35 - 49	32.322	32.322	33.451	37.451
50 - 64	84.119	84.119	70.531	70.531
All ages	29.524	29.524	34.913	34.913

TABLE 47

Mortality from Subarachnoid Haemorrhage (330) Scotland 1952 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	2.1046	1	1.0532
5 - 9	-	-	-	-
10 - 14	1	1.0080	-	-
15 - 19	-	-	1	1.0154
20 - 24	2	2.0392	2	2.0176
25 - 29	2	2.0440	3	3.0684
30 - 34	3	2.8812	1	0.9694
35 - 39	5	5.1975	5	5.1685
40 - 44	7	6.9818	4	3.9924
45 - 49	7	6.9790	15	14.9850
50 - 54	9	8.6850	10	9.8860
55 - 59	6	5.9520	12	11.8056
60 - 64	7	6.9552	14	13.8810
65 - 69	5	5.0325	9	8.9415
70 - 74	8	8.0488	14	13.8642
75 - 79	3	2.9430	8	7.7352
80 - 84	2	1.9496	2	1.9660
85 +	-	-	1	0.9646
All ages	69	68.8014	102	101.3140
Age Groups				
35 - 49	19	19.1583	24	23.9959
50 - 64	22	21.5922	36	35.5726
Rates per million				
35 - 49	36.522	36.425	43.236	42.794
50 - 64	60.543	60.544	80.909	80.934
All ages	28.316	28.212	38.287	38.035

TABLE 48

Mortality from Subarachnoid Haemorrhage (330) Scotland 1953 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	1.0079	1	1.0088
15 - 19	2	2.0480	-	-
20 - 24	2	2.1028	1	1.0292
25 - 29	2	2.0602	2	2.0718
30 - 34	7	6.4589	1	0.9332
35 - 39	4	4.3928	6	6.5226
40 - 44	9	9.0441	7	7.0252
45 - 49	3	2.9658	14	13.8978
50 - 54	10	9.3010	12	11.6880
55 - 59	13	12.7868	11	10.7118
60 - 64	3	2.9559	17	16.6192
65 - 69	7	7.0602	9	8.8515
70 - 74	6	6.1296	13	12.8024
75 - 79	5	4.8585	8	7.5520
80 - 84	2	1.8846	3	2.8614
85 +	1	0.9217	1	0.9356
All ages	77	75.9788	106	104.5105
Age Groups				
35 - 49	16	16.4027	27	27.4456
50 - 64	26	25.0437	40	39.0190
Rates per million				
35 - 49	31.295	31.186	49.433	48.946
50 - 64	70.127	70.222	88.732	88.776
All ages	31.611	31.155	39.791	39.235

TABLE 49

Mortality from Subarachnoid Haemorrhage (330) Scotland 1954
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.2802	1	1.0959
5 - 9	-	-	-	-
10 - 14	2	1.9968	-	-
15 - 19	-	-	2	2.0480
20 - 24	1	1.0740	3	3.1470
25 - 29	3	3.1272	2	2.0960
30 - 34	7	6.2377	2	1.8318
35 - 39	6	6.9492	6	6.8586
40 - 44	7	7.1344	8	8.0816
45 - 49	6	5.8500	18	17.6868
50 - 54	9	8.1783	10	9.6510
55 - 59	14	13.4386	12	11.4864
60 - 64	12	11.7756	14	13.5548
65 - 69	4	4.0508	16	15.5440
70 - 74	4	4.1296	10	9.7790
75 - 79	2	1.9354	10	9.2840
80 - 84	2	1.8008	5	4.5815
85 +	-	-	3	2.7324
All ages	82	80.9586	122	119.4588
Age Groups				
35 - 49	19	19.9336	32	32.6270
50 - 64	35	33.3925	36	34.6922
Rates per million				
35 - 49	37.790	37.89	59.447	58.187
50 - 64	92.668	93.632	78.907	78.931
All ages	33.657	33.197	45.740	44.846

TABLE 50.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1955 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0982	-	-
5 - 9	1	0.8774	-	-
10 - 14	-	-	-	-
15 - 19	1	1.0230	1	1.0269
20 - 24	4	4.3828	2	2.1340
25 - 29	3	3.1569	-	-
30 - 34	5	4.5975	4	3.8052
35 - 39	1	1.1285	4	4.4816
40 - 44	13	13.3341	8	8.0672
45 - 49	9	8.7687	14	13.7760
50 - 54	10	8.9570	12	11.5104
55 - 59	14	12.9864	13	12.2265
60 - 64	10	9.6570	17	16.1109
65 - 69	13	13.3328	15	14.6205
70 - 74	3	3.1320	11	10.6513
75 - 79	4	3.9136	13	12.0380
80 - 84	2	1.7308	2	1.7536
85 +	-	-	3	2.7330
All ages	94	92.0767	119	114.9351
Age Groups				
35 - 49	23	23.2313	26	26.3248
50 - 64	34	31.6004	42	39.8478
Rates per million				
35 - 49	45.473	44.169	47.995	46.948
50 - 64	88.135	88.607	90.746	90.661
All ages	38.506	37.756	44.567	43.148

TABLE 51.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1956 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	1	0.8672	-	-
10 - 14	-	-	1	0.9901
15 - 19	1	1.0320	1	1.0380
20 - 24	2	2.2176	2	2.1728
25 - 29	7	7.4655	6	6.4056
30 - 34	6	5.6310	4	3.9084
35 - 39	5	5.4645	5	5.4415
40 - 44	9	9.5346	7	7.2457
45 - 49	13	12.6100	12	11.7492
50 - 54	15	13.3500	14	13.4400
55 - 59	21	18.6081	17	15.6043
60 - 64	13	12.5151	14	13.1432
65 - 69	9	9.2313	17	16.4067
70 - 74	5	5.2500	11	10.5072
75 - 79	9	8.9028	9	8.2629
80 - 84	1	0.8399	3	2.5380
85 +	1	0.8731	2	1.7850
All ages	118	114.3927	125	120.6386
Age Groups				
35 - 49	27	27.6091	24	24.4364
50 - 64	49	44.4732	45	42.1875
Rates per million				
35 - 49	53.353	52.493	44.217	43.580
50 - 64	124.697	124.702	96.203	95.985
All ages	48.243	46.907	46.747	45.289

TABLE 52.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1957
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	2	1.8402	2	1.8610
15 - 19	1	1.0240	2	2.0848
20 - 24	3	3.3933	1	1.1012
25 - 29	4	4.3344	5	5.4120
30 - 34	5	4.8220	4	4.0100
35 - 39	6	6.3336	6	6.3426
40 - 44	6	6.6312	12	12.8592
45 - 49	13	12.6230	18	17.6292
50 - 54	7	6.2006	14	13.4036
55 - 59	9	7.6941	20	18.1340
60 - 64	11	10.4786	18	16.6086
65 - 69	10	10.1830	12	11.4528
70 - 74	2	2.1156	11	10.3939
75 - 79	2	1.9784	6	5.4138
80 - 84	1	0.8197	4	3.2536
85 +	-	-	2	1.7284
All ages	82	80.4717	137	131.6887
Age Groups				
35 - 49	25	25.5878	36	36.8310
50 - 64	27	24.3733	52	48.1462
Rates per million				
35 - 49	49.554	48.650	66.471	65.684
50 - 64	67.571	68.342	110.040	109.542
All ages	33.494	32.998	51.186	49.438

TABLE 53.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1958 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	0.8914	1	0.9055
15 - 19	2	1.9634	1	1.0321
20 - 24	1	1.1188	4	4.4060
25 - 29	6	6.5808	7	7.7028
30 - 34	6	5.8656	3	3.0537
35 - 39	3	3.0528	11	11.2970
40 - 44	14	16.3660	13	14.6471
45 - 49	14	13.7130	17	16.7246
50 - 54	9	7.9227	23	21.8776
55 - 59	16	13.1680	18	16.0848
60 - 64	12	11.3712	20	18.2600
65 - 69	9	9.1179	19	17.8847
70 - 74	6	6.4038	16	14.9808
75 - 79	2	2.0098	5	4.4830
80 - 84	6	4.8918	2	1.5988
85 +	1	0.8068	5	4.2140
All ages	108	105.2438	165	159.1525
Age Groups				
35 - 49	31	33.1318	41	42.6687
50 - 64	37	32.4619	61	56.2224
Rates per million				
35 - 49	61.957	62.993	76.304	76.095
50 - 64	91.046	91.022	127.747	127.917
All ages	43.912	43.155	61.529	59.748

TABLE 54.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	0.8747	1	0.8909
15 - 19	6	5.6796	2	2.0378
20 - 24	1	1.1133	5	5.4800
25 - 29	2	2.2170	1	1.1172
30 - 34	2	1.9836	5	5.2175
35 - 39	7	6.8663	8	8.0192
40 - 44	3	3.6876	8	9.4672
45 - 49	13	12.9129	14	13.8572
50 - 54	11	9.5645	11	10.3609
55 - 59	14	11.2392	20	17.6780
60 - 64	17	15.7437	22	19.7626
65 - 69	9	9.1233	15	13.9710
70 - 74	7	7.5152	15	13.8675
75 - 79	4	4.0832	9	8.0262
80 - 84	1	0.8211	4	3.1600
85 +	-	-	2	1.6446
All ages	98	93.4252	142	134.5578
Age Groups				
35 - 49	23	23.4668	30	31.3436
50 - 64	42	36.5474	53	47.8015
Rates per million				
35 - 49	46.289	44.617	56.324	55.898
60 - 64	101.366	102.478	109.660	108.757
All ages	39.636	38.309	52.786	50.515

TABLE 55.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0190	1	1.0183
5 - 9	3	2.8593	-	-
10 - 14	2	1.7170	2	1.7544
15 - 19	-	-	1	1.0155
20 - 24	2	2.1940	2	2.1930
25 - 29	2	2.2532	1	1.1374
30 - 34	5	5.0450	8	8.3504
35 - 39	8	8.1176	7	7.3045
40 - 44	11	13.2374	6	6.9816
45 - 49	11	11.0297	16	15.8272
50 - 54	11	9.5733	19	17.9189
55 - 59	20	15.7820	16	14.0336
60 - 64	9	8.0469	19	16.7979
65 - 69	15	14.9535	22	19.9760
70 - 74	3	3.2535	13	12.0068
75 - 79	3	3.0915	11	9.6415
80 - 84	-	-	6	4.6800
85 +	-	-	-	-
All ages	106	102.1729	150	140.6370
Age Groups				
35 - 49	30	32.3847	29	30.1133
50 - 64	40	33.4022	54	48.7504
Rates per million				
35 - 49	60.922	61.572	54.920	53.704
50 - 64	95.131	93.659	110.964	110.916
All ages	42.713	41.896	55.639	52.797

TABLE 56.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1961 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0066	1	1.0033
5 - 9	2	1.8954	-	-
10 - 14	-	-	4	3.4832
15 - 19	-	-	-	-
20 - 24	2	2.1726	4	4.4200
25 - 29	3	3.4542	-	-
30 - 34	4	4.1280	3	3.1857
35 - 39	9	9.3726	7	7.5376
40 - 44	7	8.1900	11	12.4608
45 - 49	12	12.4536	20	20.3600
50 - 54	12	10.4040	18	16.8840
55 - 59	9	7.0596	26	22.8176
60 - 64	12	10.3320	18	15.5952
65 - 69	16	15.8880	25	22.4550
70 - 74	9	9.7677	12	10.9416
75 - 79	4	4.1628	8	6.9120
80 - 84	4	3.3036	2	1.5428
85 +	1	0.7054	1	0.7381
All ages	107	104.2961	160	150.3369
Age Groups				
35 - 49	28	30.0162	38	40.3584
50 - 64	33	27.7956	62	55.2968
Rates per million				
35 - 49	57.547	57.069	72.839	71.975
50 - 64	77.428	77.938	126.419	125.811
All ages	43.053	42.767	59.291	56.438

TABLE 57

Mortality from Subarachnoid Haemorrhage (330) Scotland 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	0.9416
10 - 14	1	0.8957	3	2.7522
15 - 19	-	-	2	1.8886
20 - 24	2	2.1250	2	2.2156
25 - 29	7	8.1494	4	4.6896
30 - 34	13	13.5018	3	3.2214
35 - 39	12	13.2084	6	6.6216
40 - 44	5	5.6290	9	9.8982
45 - 49	4	4.3184	16	16.8720
50 - 54	8	6.9464	20	18.8020
55 - 59	18	14.0346	17	14.8903
60 - 64	12	9.9648	20	17.1180
65 - 69	9	8.8470	20	17.6980
70 - 74	9	7.7776	17	15.3612
75 - 79	-	-	11	9.4138
80 - 84	1	0.8367	7	5.3172
85 +	1	0.6899	4	2.8896
All ages	102	96.9247	162	150.5909
Age Groups				
35 - 49	21	23.1558	31	33.3918
50 - 64	38	30.9458	57	50.8103
Rates per million				
35 - 49	43.579	44.026	60.041	59.551
50 - 64	88.163	86.771	115.817	115.603
All ages	40.889	39.744	59.945	56.534

TABLE 58.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	0.9813
5 - 9	-	-	-	-
10 - 14	2	1.8420	1	0.9417
15 - 19	2	1.6664	-	-
20 - 24	3	3.1239	2	2.2042
25 - 29	7	8.2159	2	2.3528
30 - 34	1	1.0529	8	8.7328
35 - 39	5	5.4400	8	8.9896
40 - 44	8	8.6992	11	11.7777
45 - 49	13	14.8434	15	16.6500
50 - 54	17	14.8716	22	20.7922
55 - 59	11	8.5393	16	13.9280
60 - 64	19	15.1430	29	24.4586
65 - 69	15	14.7585	9	7.8858
70 - 74	6	6.4926	13	11.5700
75 - 79	9	9.6174	7	5.9031
80 - 84	2	1.7156	6	4.5300
85 +	4	2.7480	2	1.4016
All ages	124	118.7697	152	143.0994
Age Groups				
35 - 49	26	28.9826	34	37.4173
50 - 64	47	38.5539	67	59.1788
Rates per million				
35 - 49	54.600	55.104	66.751	66.730
50 - 64	107.940	108.104	135.506	134.643
All ages	49.613	48.702	56.189	53.721

TABLE 59

Mortality from Subarachnoid Haemorrhage (330) Scotland 1964 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.9755	2	1.9508
5 - 9	-	-	-	-
10 - 14	-	-	2	1.9130
15 - 19	4	3.2796	3	2.7246
20 - 24	1	1.0239	1	1.0987
25 - 29	3	3.5724	1	1.1811
30 - 34	3	3.2115	8	8.8976
35 - 39	6	6.6648	8	9.1432
40 - 44	18	18.9252	20	20.9900
45 - 49	16	19.2784	17	19.8866
50 - 54	11	9.7790	37	35.2647
55 - 59	17	13.0577	34	29.3862
60 - 64	15	11.6625	30	25.0470
65 - 69	9	8.6769	22	18.9794
70 - 74	13	14.1089	21	18.4506
75 - 79	4	4.2776	17	13.9876
80 - 84	2	1.7200	3	2.2155
85 +	-	-	6	4.0122
All ages	125	120.2139	232	215.1288
Age Groups				
35 - 49	40	44.8684	45	50.0198
50 - 64	43	34.4992	101	89.6979
Rates per million				
35 - 49	84.962	85.307	89.677	89.205
50 - 64	98.286	96.735	203.752	204.080
All ages	49.206	49.294	85.713	80.762

TABLE 60.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1965 Standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	1	0.9718
5 - 9	-	-	-	-
10 - 14	1	0.9478	-	-
15 - 19	2	1.6152	2	1.7922
20 - 24	4	4.1128	-	-
25 - 29	1	1.1978	1	1.1899
30 - 34	1	1.0930	2	2.2694
35 - 39	8	9.0632	10	11.5900
40 - 44	12	13.1052	16	17.5264
45 - 49	15	17.7450	20	23.0520
50 - 54	10	8.9680	20	19.0720
55 - 59	10	7.7010	33	28.6242
60 - 64	12	9.2064	25	20.7225
65 - 69	9	8.4222	31	26.3469
70 - 74	9	9.6561	18	15.3900
75 - 79	4	4.3784	10	8.2400
80 - 84	4	3.4564	8	5.7416
85 +	2	1.3380	2	1.2928
All ages	104	102.0065	199	183.8217
Age Groups				
35 - 49	35	39.9134	46	52.1684
50 - 64	32	25.8754	78	68.4187
Rates per million				
35 - 49	75.447	75.887	93.080	93.037
50 - 64	73.160	72.554	157.226	155.665
All ages	41.647	41.828	73.521	69.009

TABLE 61.

Mortality from Subarachnoid Haemorrhage (330) Scotland 1966 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	2	1.9226
15 - 19	2	1.6054	1	0.8914
20 - 24	4	4.0432	1	1.0887
25 - 29	6	7.3092	4	4.8524
30 - 34	4	4.5396	4	4.6684
35 - 39	5	5.7985	12	14.1768
40 - 44	6	6.7488	14	15.8368
45 - 49	11	13.0130	21	23.5746
50 - 54	9	8.3385	23	22.6067
55 - 59	17	13.0152	21	18.1167
60 - 64	9	6.8508	13	10.7822
65 - 69	14	12.5902	26	21.6242
70 - 74	7	7.5103	14	11.8398
75 - 79	6	6.5850	15	12.1470
80 - 84	4	3.5244	8	5.6128
85 +	3	2.0070	2	1.2628
All ages	107	103.4791	181	171.0039
Age Groups				
35 - 49	22	25.8178	47	53.5882
50 - 64	35	28.2045	57	51.5056
Rates per million				
35 - 49	47.920	48.597	95.958	95.569
50 - 64	80.608	79.085	115.924	117.185
All ages	42.974	42.432	67.015	64.197

TABLE 62

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330 - 334 Scotland 1947, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.2964	1	1.0862
5 - 9	1	1.0286	2	2.0522
10 - 14	-	-	1	1.0009
15 - 19	7	5.9171	2	1.9150
20 - 24	5	4.2405	3	2.9199
25 - 29	4	3.8920	7	6.9524
30 - 34	12	11.0220	15	14.0595
35 - 39	16	14.8112	14	13.3588
40 - 44	40	40.5480	46	46.3864
45 - 49	68	72.7940	85	86.7255
50 - 54	105	116.9490	173	183.9509
55 - 59	173	177.0482	251	259.1073
60 - 64	300	295.5000	403	407.1509
65 - 69	527	507.8172	635	642.7470
70 - 74	690	686.2050	840	867.1320
75 - 79	630	703.5210	828	919.4112
80 - 84	412	454.1064	649	669.5084
85 +	191	226.5451	387	437.6970
All ages	3184	3325.2417	4342	4563.1615
Age Groups				
35 - 49	124	128.1532	145	146.4707
50 - 64	578	589.4972	827	850.2091
Rates per million				
35 - 49	235.4853	243.6553	256.8094	261.2157
50 - 64	1695.5218	1652.9380	1951.6776	1934.3860
All ages	1285.8500	1365.5215	1642.6467	1713.0643

TABLE 63.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330 - 334 Scotland 1948, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	6.3774	1	1.0531
5 - 9	2	2.0510	1	1.0183
10 - 14	1	0.9947	2	1.9930
15 - 19	4	3.4248	2	1.9358
20 - 24	7	5.9192	5	4.9145
25 - 29	10	9.3150	10	9.6330
30 - 34	7	6.7655	13	12.8765
35 - 39	14	12.9220	21	20.1663
40 - 44	36	36.0072	39	39.1326
45 - 49	64	65.8496	82	82.5002
50 - 54	90	99.2970	171	180.5589
55 - 59	199	201.3681	222	227.0838
60 - 64	286	281.1094	355	356.3490
65 - 69	458	447.2370	629	635.5416
70 - 74	652	638.8948	811	820.0021
75 - 79	618	668.4288	837	907.6428
80 - 84	373	393.5896	613	616.2489
85 +	174	192.1830	394	423.1166
All ages	3001	3071.7341	4208	4341.7670
Age Groups				
35 - 49	114	114.7788	142	141.7991
50 - 64	575	581.7745	748	763.9917
Rates per million				
35 - 49	212.7326	218.2268	250.5200	252.8843
50 - 64	1673.3016	1631.2837	1751.9492	1738.2252
All ages	1202.2625	1259.5702	1585.5951	1629.9502

TABLE 64

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330 - 334 Scotland 1949, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.1167	3	3.0975
5 - 9	-	-	1	1.0138
10 - 14	1	0.9916	3	2.9754
15 - 19	4	3.4764	1	0.9807
20 - 24	4	3.4428	7	6.9643
25 - 29	3	2.7003	7	6.5891
30 - 34	11	11.2211	10	10.4970
35 - 39	21	19.6161	22	21.3334
40 - 44	36	35.5680	44	43.8504
45 - 49	74	74.5698	92	92.0460
50 - 54	103	111.1679	168	175.4592
55 - 59	177	179.0001	223	227.7722
60 - 64	359	354.1176	412	411.8352
65 - 69	458	452.2292	667	677.0050
70 - 74	659	645.9518	863	862.4822
75 - 79	649	682.3586	898	949.6350
80 - 84	428	445.0772	681	683.0430
85 +	177	187.9209	401	409.9824
All ages	3167	3213.5441	4503	4586.5618
Age Groups				
35 - 49	131	129.7539	158	157.2298
50 - 64	639	644.2856	803	815.0666
Rates per million				
35 - 49	242.9011	246.6987	278.5667	280.4034
50 - 64	1845.7005	1806.5635	1869.9293	1854.4302
All ages	1266.3263	1317.3096	1696.0905	1721.8491

TABLE 65.

Total Mortality from ascular Disease of the Central Nervous System I.S.C.330 - 334 Scotland 1950, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0147	1	1.0130
5 - 9	-	-	1	1.0143
10 - 14	1	0.9928	2	1.9834
15 - 19	3	2.6505	2	1.9776
20 - 24	9	7.8642	4	3.9840
25 - 29	7	6.5205	7	6.8124
30 - 34	6	5.9712	14	14.3948
35 - 39	10	9.4180	22	21.3378
40 - 44	28	27.6668	47	47.0423
45 - 49	58	57.6752	105	104.5485
50 - 54	109	113.5453	177	181.6728
55 - 59	199	198.2040	275	275.9900
60 - 64	325	323.4400	439	441.5462
65 - 69	535	531.5760	647	652.4995
70 - 74	759	747.2355	978	973.9902
75 - 79	794	806.3864	1098	1120.9482
80 - 84	521	526.7310	793	790.7003
85 +	270	273.7530	485	481.7505
All ages	3635	3640.6451	5097	5123.2058
Age Groups				
35 - 49	96	94.7600	174	172.9236
50 - 64	623	635.1893	891	899.2090
Rates per million				
35 - 49	177.7791	180.1654	306.7641	308.4007
50 - 64	1759.0518	1781.0577	2053.0474	2065.8700
All ages	1450.7561	1492.8532	1914.5301	1923.3115

TABLE 66.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1951, standardised on the 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	8	8	1	8
5 - 9	1	1	3	3
10 - 14	1	1	1	1
15 - 19	3	3	4	4
20 - 24	7	7	4	4
25 - 29	11	11	3	3
30 - 34	12	12	7	7
35 - 39	12	12	16	16
40 - 44	26	26	60	60
45 - 49	70	70	84	84
50 - 54	137	137	181	181
55 - 59	212	212	308	308
60 - 64	363	363	452	452
65 - 69	542	542	712	712
70 - 74	783	783	986	986
75 - 79	878	878	1128	1128
80 - 84	532	532	789	789
85 +	265	265	520	520
All ages	3863	3863	5259	5259
Age Groups				
35 - 49	108	108	160	160
50 - 64	712	712	941	941
Rates per million				
35 - 49	205.3384	205.3384	285.3438	285.3438
50 - 64	1996.4333	1996.4333	2140.9524	2140.9524
All ages	1584.0302	1584.0302	1974.2903	1974.2903

TABLE 67

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330 - 334 Scotland 1952, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	4.2092	4	4.2128
5 - 9	1	0.9376	-	-
10 - 14	1	1.0080	2	2.0198
15 - 19	-	-	2	2.0308
20 - 24	6	6.1176	5	5.0440
25 - 29	4	4.0880	9	9.2052
30 - 34	13	12.4852	7	6.7858
35 - 39	12	12.4740	17	17.5729
40 - 44	34	33.9116	46	45.9126
45 - 49	56	55.8320	97	96.9030
50 - 54	110	106.1500	186	183.8796
55 - 59	201	199.3920	263	258.7394
60 - 64	365	362.6640	391	387.6765
65 - 69	569	572.6985	738	733.2030
70 - 74	751	755.5811	966	956.6292
75 - 79	883	866.2230	1104	1067.4576
80 - 84	582	567.3336	797	783.4510
85 +	267	255.3525	594	572.9724
All ages	3859	3816.7579	5228	5133.6956
Age Groups				
35 - 49	102	102.2176	160	160.3885
50 - 64	676	668.2060	840	830.2955
Rates per million				
35 - 49	196.0629	194.3444	288.2431	286.0366
50 - 64	1860.3217	1873.[illegible]	1887.8822	1889.0788
All ages	1583.6420	1565.0686	1962.4190	1927.2495

TABLE 68

Total Motality from Vascular Disease of the Central Nervous System I.S.C.330-334
Scotland 1953, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	5.3980	4	4.3260
5 - 9	-	-	-	-
10 - 14	1	1.0079	1	1.0083
15 - 19	5	5.1200	1	1.0225
20 - 24	8	8.4112	5	5.1460
25 - 29	6	6.1806	8	8.2872
30 - 34	10	9.2270	7	6.5324
35 - 39	17	18.6694	19	20.6549
40 - 44	36	36.1764	55	55.1980
45 - 49	57	56.3502	104	103.2408
50 - 54	117	108.8217	167	162.6580
55 - 59	239	235.0804	254	247.3452
60 - 64	324	319.2372	436	426.2336
65 - 69	540	544.6440	655	644.1925
70 - 74	735	750.8760	936	921.7728
75 - 79	859	834.6903	1125	1062.0000
80 - 84	566	533.3418	804	766.8552
85 +	256	235.9552	523	498.6748
All ages	3781	3709.1873	5114	4935.1482
Age Groups				
35 - 49	110	111.1960	178	179.0937
50 - 64	680	663.1393	857	836.2368
Rates per million				
35 - 49	215.1517	211.4149	325.8891	319.3955
50 - 64	1834.1002	1859.4289	1901.0858	1902.5964
All ages	1552.2193	1520.9591	1919.7114	1852.7125

TABLE 69

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1954, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	7.6538	5	5.4795
5 - 9	-	-	1	0.9004
10 - 14	3	2.9952	-	-
15 - 19	1	1.0367	2	2.0480
20 - 24	4	4.2960	6	6.2940
25 - 29	8	8.3392	5	5.2400
30 - 34	13	11.5843	10	9.1590
35 - 39	13	15.0566	12	13.7172
40 - 45	28	28.5376	41	41.4182
45 - 49	62	60.4500	111	109.0686
50 - 54	120	109.0440	184	177.5784
55 - 59	227	217.8973	272	260.3584
60 - 64	340	333.6420	489	473.4498
65 - 69	522	528.6294	670	650.9050
70 - 74	753	777.3972	1025	1002.3475
75 - 79	888	859.3176	1227	1139.1468
80 - 84	650	585.2600	925	847.5775
85 +	314	283.2908	624	568.3392
All ages	3953	3834.4277	5609	5313.0275
Age Groups				
35 - 49	103	104.0442	164	164.2040
50 - 64	687	660.5833	945	911.3866
Rates per million				
35 - 49	204.8626	197.8173	304.6656	292.8412
50 - 64	1818.9472	1852.2619	2071.3009	2073.5764
All ages	1622.5050	1572.3141	2102.8944	1994.5728

TABLE 70.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330-334 Scotland 1955, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	4.3928	-	-
5 - 9	1	0.8774	1	0.8867
10 - 14	2	1.9924	-	-
15 - 19	1	1.0230	1	1.0269
20 - 24	6	6.5742	5	5.3350
25 - 29	6	6.3138	2	2.1126
30 - 34	8	7.3560	7	6.6591
35 - 39	8	9.0280	13	14.5652
40 - 44	33	33.8481	36	36.3024
45 - 49	62	60.4066	84	82.6560
50 - 54	122	109.2754	167	160.1864
55 - 59	226	209.6376	273	256.7565
60 - 64	339	327.3723	448	424.5696
65 - 69	543	556.9008	699	681.3153
70 - 74	790	824.7600	1029	996.3807
75 - 79	870	851.2080	1185	1097.3100
80 - 84	640	553.8560	959	840.8512
85 +	359	328.8799	678	617.6580
All ages	4020	3893.7023	5587	5224.5716
Age Groups				
35 - 49	103	103.2827	133	133.5236
50 - 64	687	646.2853	888	841.5125
Rates per million				
35 - 49	203.6418	196.3695	245.5106	238.1258
50 - 64	1780.8446	1812.1706	1918.6268	1914.5996
All ages	1646.7385	1596.6198	2092.3925	1961.3654

TABLE 71.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1956, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0934	1	1.0893
5 - 9	1	0.8672	1	0.8781
10 - 14	-	-	3	2.9703
15 - 19	5	5.1600	3	3.1140
20 - 24	4	4.4352	2	2.1728
25 - 29	13	13.8645	7	7.4732
30 - 34	13	12.2005	10	9.7710
35 - 39	10	10.9290	16	17.4128
40 - 44	33	34.9602	25	25.8775
45 - 49	69	66.9300	9[illegible]	90.0772
50 - 54	131	116.5900	158	151.6800
55 - 59	244	216.2084	265	243.2435
60 - 64	354	340.7958	416	390.5408
65 - 69	550	564.1350	669	645.6519
70 - 74	755	792.7500	1000	955.2000
75 - 79	859	849.7228	1240	1138.4440
80 - 84	709	595.4891	1014	857.8440
85 +	325	283.7575	682	608.6850
All ages	4076	3909.8886	5604	5152.1254
Age Groups				
35 - 49	112	112.8192	133	133.3675
50 - 64	729	673.5942	839	785.4643
Rates per million				
35 - 49	221.3176	214.5015	245.0366	237.8474
50 - 64	1855.1931	1888.7442	1793.6510	1787.0794
All ages	1666.4138	1603.2570	2095.7633	1934.1683

TABLE 72.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334
Scotland 1957, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1.0752	1	1.0736
5 - 9	1	0.9126	1	0.9249
10 - 14	4	3.6804	4	3.7220
15 - 19	3	3.0720	3	3.1272
20 - 24	3	3.3933	3	3.3036
25 - 29	5	5.4180	7	7.5768
30 - 34	10	9.6440	11	11.0275
35 - 39	16	16.8896	15	15.8165
40 - 44	25	27.6300	38	40.7208
45 - 49	68	66.0348	86	84.2284
50 - 54	129	114.2682	150	143.6100
55 - 59	264	225.6936	259	234.8353
60 - 64	311	296.2586	424	391.2248
65 - 69	525	534.6075	632	603.1808
70 - 74	742	784.8876	966	912.7734
75 - 79	860	850.7120	1192	1075.5416
80 - 84	694	568.8718	999	812.5866
85 +	369	305.7165	745	643.8290
All ages	4030	3818.7657	5536	4989.1428
Age Groups				
35 - 49	109	110.5544	139	140.8057
50 - 64	704	636.2204	833	769.6701
Rates per million				
35 - 49	216.0572	210.1950	256.6521	251.1127
50 - 64	1761.8543	1783.9489	1762.7615	1751.1446
All ages	1646.1207	1565.8919	2068.3666	1872.9827

TABLE 73.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1958, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	6.3330	2	2.1070
5 - 9	1	0.9355	-	-
10 - 14	2	1.7828	4	3.6220
15 - 19	3	2.9613	2	2.0642
20 - 24	2	2.2376	6	6.6090
25 - 29	10	10.9680	13	14.3052
30 - 34	9	8.7984	10	10.1790
35 - 39	12	12.2112	26	26.7020
40 - 44	33	38.5770	44	49.5748
45 - 49	75	73.4625	86	84.6068
50 - 54	134	117.9602	196	186.4352
55 - 59	241	198.3430	266	237.6976
60 - 64	323	306.0748	422	385.2860
65 - 69	537	544.0347	619	582.6647
70 - 74	716	764.1868	1064	996.2232
75 - 79	881	885.3169	1199	1075.0234
80 - 84	737	600.8761	1130	903.3220
85 +	389	312.2316	782	659.0696
All ages	4111	3887.2914	5871	5225.4917
Age Groups				
35 - 49	120	124.2507	156	160.8836
50 - 64	698	622.3780	884	809.4188
Rates per million				
35 - 49	239.8349	236.2355	290.3287	286.9196
50 - 64	1717.5746	1745.1350	1851.2895	1841.5804
All ages	1671.4813	1593.9910	2189.3155	1961.7108

TABLE 74.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330-334
Scotland 1959, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	3.1101	2	2.0674
5 - 9	-	-	-	-
10 - 14	3	2.6241	3	2.6727
15 - 19	7	6.6262	2	2.0378
20 - 24	1	1.1133	8	8.7680
25 - 29	2	2.2170	4	4.4688
30 - 34	6	5.9508	9	9.3915
35 - 39	20	19.6180	26	26.0624
40 - 44	20	24.5840	39	46.1526
45 - 49	57	56.6181	74	73.2452
50 - 54	110	95.6450	156	146.9364
55 - 59	222	178.2216	280	247.4920
60 - 64	348	322.2828	446	400.6418
65 - 69	487	493.6719	679	632.4206
70 - 74	728	781.5808	959	886.5955
75 - 79	880	898.3040	1232	1098.6976
80 - 84	73[illegible]	603.5085	1116	881.6400
85 +	420	331.9680	778	639.7494
All ages	4049	3827.6442	5813	5109.0397
Age Groups				
35 - 49	97	100.8201	139	145.4602
50 - 64	680	596.1494	882	795.0702
Rates per million				
35 - 49	195.2178	191.6874	260.9667	259.4135
50 - 64	1641.1563	1671.5906	1824.9005	1808.9346
All ages	1637.6157	1569.5325	2160.8661	1917.9934

TABLE 75.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1960, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	8	8.1520	5	5.0915
5 - 9	4	3.8124	1	0.9626
10 - 14	3	2.5755	3	2.6316
15 - 19	1	0.9338	3	3.0465
20 - 24	5	5.4850	2	2.1930
25 - 29	3	3.3798	4	4.5496
30 - 34	12	12.1080	10	10.4380
35 - 39	15	15.2205	17	17.7395
40 - 44	32	38.5088	38	44.2168
45 - 49	63	63.1701	79	78.1468
50 - 54	148	128.8044	146	137.6926
55 - 59	257	202.7987	235	206.1185
60 - 64	362	323.6642	376	332.4216
65 -69	544	542.3136	643	588.3840
70 - 74	735	794.1075	921	850.6356
75 - 79	854	880.0470	1154	1011.4810
80 - 84	739	604.4281	1092	851.7600
85 +	421	306.1933	910	695.4220
All ages	4206	3938.7027	5644	4842.9312
Age Groups				
35 - 49	110	116.89.4	134	140.1031
50 - 64	767	655.2673	757	676.2327
Rates per million				
35 - 49	225.3820	222.2586	253.7667	249.8597
50 - 64	1824.1404	1837.3560	1555.5519	1538.5569
All ages	1694.8134	1615.0723	2093.4958	1818.0931

TABLE 76

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1961, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	4.0264	2	2.0066
5 - 9	3	2.8431	1	0.9556
10 - 14	3	2.5527	5	4.3540
15 - 19	1	0.9175	-	-
20 - 24	6	6.5173	4	4.4200
25 - 29	3	3.4542	5	5.8095
30 - 34	6	6.1920	5	5.3095
35 - 39	15	15.6210	22	23.6896
40 - 44	29	33.9300	34	38.5152
45 - 49	75	77.8350	80	81.4400
50 - 54	117	101.4390	139	130.3820
55 - 59	211	165.5084	259	227.2984
60 - 64	374	322.0140	383	331.8312
65 - 69	515	511.3950	664	596.4048
70 - 74	673	730.4069	997	909.0646
75 - 79	805	837.7635	1217	1051.4880
80 - 84	745	615.2955	1106	853.1684
85 +	463	326.6002	868	640.6708
All ages	4048	3764.3122	5791	4906.8082
Age Groups				
35 - 49	119	127.3860	136	143.6448
50 - 64	702	588.9614	781	689.5116
Rates per million				
35 - 49	244.5766	242.1966	260.6877	256.1760
50 - 64	1647.0947	1651.4356	1592.4735	1568.7689
All ages	1628.7817	1543.5631	2145.9728	1842.0733

TABLE 77

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1962, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	1.9802	3	2.9688
5 - 9	-	-	3	2.8248
10 - 14	3	2.6871	4	3.6696
15 - 19	1	0.8584	5	4.7215
20 - 24	2	2.1250	3	3.3234
25 - 29	12	13.9704	6	7.0344
30 - 34	15	15.5790	7	7.5166
35 - 39	19	20.3167	14	15.4504
40 - 44	24	27.0192	32	35.1936
45 - 49	52	56.1392	63	66.4335
50 - 54	108	93.7764	117	109.9917
55 - 59	230	179.3310	234	204.9606
60 - 64	390	323.8950	383	327.8097
65 - 69	487	478.7210	614	543.3286
70 - 74	693	752.8752	953	861.1308
75 - 79	834	883.7898	1285	1099.7030
80 - 84	756	632.5452	1141	866.7030
85 +	465	320.8035	851	614.7624
All ages	4093	3806.4123	5718	4777.5270
Age Groups				
35 - 49	95	103.4751	109	117.0775
50 - 64	728	597.0024	734	642.7620
Rates per million				
35 - 49	197.1437	196.7353	211.1106	208.7959
50 - 64	1689.0206	1673.9824	1491.3940	1462.4047
All ages	1640.7657	1560.8263	2115.8492	1793.5396

TABLE 78

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1963, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	4.9000	1	0.9813
5 - 9	1	0.9175	1	0.9255
10 - 14	4	3.6840	1	0.9417
15 - 19	2	1.6664	1	0.9210
20 - 24	7	7.2891	2	2.2042
25 - 29	10	11.7370	5	5.8820
30 - 34	3	3.1587	13	14.1908
35 - 39	19	20.6720	21	23.5977
40 - 44	31	33.7094	45	48.1815
45 - 49	56	63.9408	68	75.4800
50 - 54	110	96.2280	143	135.1493
55 - 59	203	157.5889	222	193.2510
60 - 64	358	285.3260	448	377.8432
65 - 69	525	516.5475	630	552.0060
70 - 74	639	745.5669	908	808.1200
75 - 79	842	899.7612	1180	995.0940
80 - 84	761	652.7858	1188	893.1650
85 +	505	346.9350	934	654.5472
All ages	4131	3852.4142	5806	4782.4814
Age Groups				
35 - 49	106	118.3222	134	147.2592
50 - 64	671	539.1429	813	706.2435
Rates per million				
35 - 49	222.5988	224.9638	263.0757	262.6219
50 - 64	1541.0160	1511.7455	1644.2744	1606.8371
All ages	1652.8389	1579.6895	2146.2654	1795.3996

TABLE 79.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1964, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	6.8285	4	3.9016
5 - 9	2	1.8066	1	0.9117
10 - 14	2	1.8764	5	4.7825
15 - 19	5	4.0995	4	3.6328
20 - 24	1	1.0239	2	2.1974
25 - 29	5	5.9540	3	3.5433
30 - 34	10	10.7050	11	12.2342
35 - 39	14	15.5512	17	19.4293
40 - 44	52	54.6728	48	50.3760
45 - 49	56	67.4744	62	72.5276
50 - 54	119	105.7910	151	143.9181
55 - 59	255	195.8655	226	195.3318
60 - 64	408	317.2200	378	315.5922
65 - 69	574	553.3934	670	578.0090
70 - 74	746	809.6338	967	849.6062
75 - 79	764	817.0216	1247	1026.0316
80 - 84	656	564.1600	1147	847.0595
85 +	516	348.7644	988	660.6756
All ages	4192	3881.8420	5931	4789.7604
Age Groups				
35 - 49	122	137.6984	127	142.3329
50 - 64	782	618.8765	755	654.8421
Rates per million				
35 - 49	259.1333	261.8034	253.0888	253.8363
50 - 64	1787.4285	1735.3169	1523.0986	1489.8892
All ages	1677.0012	1591.7564	2191.2291	1798.1322

TABLE 80.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C.330-334 Scotland 1965, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	1.9376	4	3.8872
5 - 9	2	1.7768	1	0.8992
10 - 14	1	0.9478	-	-
15 - 19	3	2.4228	3	2.6883
20 - 24	4	4.1128	-	-
25 - 29	3	3.5934	6	7.1394
30 - 34	5	5.4650	8	9.0776
35 - 39	18	20.3922	25	28.9750
40 - 44	34	37.1314	41	44.9114
45 - 49	58	68.6140	80	92.2080
50 - 54	97	86.9896	106	101.0922
55 - 59	228	175.5828	236	204.7064
60 - 64	395	303.0440	398	329.9022
65 - 69	535	500.6530	668	567.7332
70 - 74	725	777.8525	1052	899.4600
75 - 79	801	876.7746	1287	1060.4880
80 - 84	700	604.8700	1249	896.4073
85 +	569	380.6610	1149	742.7136
All ages	4180	3852.8213	6313	4992.2890
Age Groups				
35 - 49	110	126.1376	146	166.0944
50 - 64	720	565.6164	740	635.7008
Rates per million				
35 - 49	237.1200	239.8231	295.4269	296.2125
50 - 64	1646.0905	1585.9767	1491.6347	1446.3392
All ages	1673.8747	1579.8564	2332.3604	1874.1638

TABLE 81.

Total Mortality from Vascular Disease of the Central Nervous System I.S.C. 330-334 Scotland 1966, standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	1.9524	3	2.9436
5 - 9	3	2.6319	-	-
10 - 14	-	-	2	1.9226
15 - 19	5	4.0135	2	1.7828
20 - 24	5	5.0540	6	6.5322
25 - 29	7	8.5274	6	7.2786
30 - 34	7	7.9443	9	10.5039
35 - 39	18	20.8746	23	27.1722
40 - 44	26	29.2448	32	36.1984
45 - 49	48	55.3872	57	63.9882
50 - 54	122	113.0330	146	143.5034
55 - 59	220	168.4320	250	215.6750
60 - 64	396	301.4352	362	300.2428
65 - 69	540	485.6220	624	518.9808
70 - 74	677	726.3533	988	835.5516
75 - 79	776	851.6600	1255	1016.2990
80 - 84	695	612.3645	1261	884.7176
85 +	534	357.2460	1214	766.5196
All ages	4081	3751.7761	6240	4839.8123
Age Groups				
35 - 49	92	105.5066	112	127.3588
50 - 64	738	582.9002	758	659.4212
Rates per million				
35 - 49	200.3921	200.5977	228.6647	227.1315
50 - 64	1699.6775	1634.4401	1541.5904	1500.3076
All ages	1639.0216	1538.4227	2310.3409	1816.9223

TABLE 82.

Mortality from Cerebral Haemorrhage (331) England & Wales 1947 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	25	3.349	24	3.224
5 - 9	1	0.141	1	0.141
10 - 14	9	1.257	4	0.563
15 - 19	13	1.530	9	1.179
20 - 24	10	1.109	13	1.600
25 - 29	26	2.950	29	3.367
30 - 34	35	3.600	43	4.659
35 - 39	80	8.233	95	10.328
40 - 44	173	19.172	234	26.676
45 - 49	367	43.507	489	56.653
50 - 54	621	74.649	847	100.156
55 - 59	1028	110.661	1291	145.852
60 - 64	1654	175.000	2122	233.002
65 - 69	2353	250.402	3058	334.781
70 - 74	2966	335.235	3894	439.504
75 - 79	2670	328.370	3810	443.137
80 - 84	1709	206.158	2725	303.459
85 +	794	90.391	1658	180.059
All ages	14544	1655.714	20346	2288.340
Age Groups				
35 - 49	620	70.912	818	93.657
50 - 64	3313	360.310	4260	479.010
Rates per million				
35 - 49	130.0063	134.8237	164.4552	167.0278
50 - 64	1036.6083	1010.3018	1104.4854	1089.8381
All ages	698.4920	678.9286	915.3320	859.0697

TABLE 83.

Mortality from Cerebral Haemorrhage (331) England & Wales 1948
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	15	1.938	16	2.072
5 - 9	2	0.277	1	0.139
10 - 14	5	0.691	1	0.139
15 - 19	8	0.950	11	1.459
20 - 24	9	0.994	7	0.875
25 - 29	28	3.015	23	2.575
30 - 34	51	5.487	57	6.513
35 - 39	79	8.130	86	9.393
40 - 44	173	18.837	186	21.002
45 - 49	320	36.925	456	52.195
50 - 54	532	62.528	875	102.309
55 - 59	972	104.053	1206	134.575
60 - 64	1606	167.821	1970	214.460
65 - 69	2169	229.936	2787	301.180
70 - 74	2618	291.381	3613	396.303
75 - 79	2433	286.581	3615	403.835
80 - 84	1425	162.107	2532	268.134
85 +	687	71.902	1491	149.929
All ages	13132	1453.553	18933	2067.087
Age Groups				
39 - 49	572	63.892	728	82.590
50 - 64	3110	334.402	4051	451.344
Rates per million				
35 - 49	118.2551	121.4767	145.5709	147.2909
50 - 64	961.3601	937.6563	1038.9844	1026.8927
All ages	622.6352	596.0321	844.8083	776.0087

TABLE 84

Mortality from Cerebral Haemorrhage (331) England & Wales 1949 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	13	1.657	11	1.406
5 - 9	1	0.134	4	0.540
10 - 14	-	-	6	0.824
15 - 19	7	0.844	7	0.939
20 - 24	17	1.896	17	2.148
25 - 29	23	2.393	21	2.282
30 - 34	33	3.748	38	4.602
35 - 39	69	7.114	97	10.631
40 - 44	171	18.375	178	19.934
45 - 49	391	44.094	472	53.519
50 - 54	638	72.710	888	101.973
55 - 59	948	101.390	1288	142.739
60 - 64	1634	169.843	1888	203.615
65 - 69	2237	237.144	2851	304.775
70 - 74	2861	316.278	3893	418.969
75 - 79	2618	300.745	4054	440.686
80 - 84	1625	179.189	2655	273.924
85 +	745	74.374	1728	167.554
All ages	14031	1531.928	20096	2151.060
Age Groups				
35 - 49	631	69.583	747	84.084
50 - 64	3220	343.943	4064	448.327
Rates per million				
35 - 49	129.0389	132.2969	148.6863	149.9553
50 - 64	982.0067	964.4091	1030.1648	1020.0285
All ages	660.6243	628.1699	891.3332	807.5332

TABLE 85

Mortality from Cerebral Haemorrhage (331) England & Wales 1950
standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	10	1.269	4	0.507
5 - 9	2	0.260	2	0.262
10 - 14	5	0.678	-	-
15 - 19	1	0.129	3	0.407
20 - 24	7	0.819	9	1.144
25 - 29	13	1.440	10	1.146
30 - 34	24	2.657	28	3.272
35 - 39	54	5.630	67	7.373
40 - 44	133	14.224	147	16.366
45 - 49	268	29.610	398	44.819
50 - 54	560	61.798	835	94.204
55 - 59	860	91.556	1207	132.448
60 - 64	1519	156.891	1861	199.015
65 - 69	2214	234.407	2875	304.652
70 - 74	2843	312.707	3752	395.836
75 - 79	2642	296.181	3825	404.892
80 - 84	1660	176.549	2796	282.245
85 +	827	78.917	1768	165.522
All ages	13642	1465.722	19587	2054.110
Age Groups				
35 - 49	455	49.464	612	68.558
50 - 64	2939	310.245	3903	425.667
Rates per million				
35 - 49	92.6680	94.0450	121.4768	122.2663
50 - 64	882.3176	869.9206	977.2158	968.4727
All ages	644.4328	601.0220	864.3484	771.1370

TABLE 86

Mortality from Cerebral Haemorrhage (331) England & Wales 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.508	4	0.507
5 - 9	1	0.125	1	0.127
10 - 14	4	0.544	3	0.411
15 - 19	8	1.040	1	0.136
20 - 24	7	0.873	4	0.516
25 - 29	9	1.040	14	1.653
30 - 34	27	2.958	36	4.111
35 - 39	43	4.665	53	5.950
40 - 44	146	15.661	164	18.248
45 - 49	327	35.230	431	47.880
50 - 54	571	61.443	750	84.047
55 - 59	930	98.374	1259	136.505
60 - 64	1494	154.309	1854	195.310
65 - 69	2192	233.569	2787	291.643
70 - 74	2718	303.541	3714	377.866
75 - 79	2755	308.849	3890	396.904
80 - 84	1700	179.739	2792	284.915
85 +	816	89.746	1750	179.972
All ages	13752	1494.214	19507	2026.701
Age Groups				
35 - 49	516	55.556	648	72.078
50 - 64	2995	314.126	3863	415.862
Rates per million				
35 - 49	105.7811	105.6276	128.9039	128.5438
50 - 64	888.4604	880.8028	956.6617	946.1645
All ages	653.3326	611.8851	857.4128	760.8473

TABLE 87.

Mortality from Cerebral Haemorrhage (331) England & Wales 1952
standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	0.404	2	0.269
5 - 9	1	0.115	3	0.349
10 - 14	3	0.406	1	0.137
15 - 19	4	0.520	1	0.136
20 - 24	12	1.524	7	0.914
25 - 29	5	0.596	12	1.462
30 - 34	26	2.745	24	2.655
35 - 39	62	6.944	63	7.297
40 - 44	169	18.247	153	17.104
45 - 49	298	31.562	415	45.682
50 - 54	598	62.464	882	97.531
55 - 59	935	97.217	1208	129.716
60 - 64	1541	158.332	1795	187.387
65 - 69	2108	223.469	2567	266.575
70 - 74	2556	284.480	3597	360.398
75 - 79	2450	271.024	3705	364.224
80 - 84	1565	158.923	2724	266.353
85 +	786	80.958	1625	159.851
All ages	13122	1399.930	18784	1908.040
Age Groups				
35 - 49	529	56.753	631	70.083
50 - 64	3074	318.013	3885	414.634
Rates per million				
35 - 49	109.2298	107.9034	126.6560	124.9860
50 - 64	894.9054	891.7019	951.7393	943.3706
All ages	621.3362	574.0439	823.1015	716.3006

TABLE 88

Mortality from Cerebral Haemorrhage (331) England & Wales 1953 standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	0.698	4	0.558
5 - 9	-	-	1	0.112
10 - 14	-	-	1	0.135
15 - 19	2	0.258	1	0.135
20 - 24	5	0.632	6	0.794
25 - 29	10	1.211	10	1.248
30 - 34	31	3.142	26	2.773
35 - 39	60	7.093	60	7.341
40 - 44	129	14.046	134	15.033
45 - 49	323	33.682	398	43.414
50 - 54	614	62.444	822	89.767
55 - 59	927	94.352	1167	123.849
60 - 64	1444	148.055	1700	176.168
65 - 69	1988	210.480	2578	265.441
70 - 74	2455	273.703	3392	337.100
75 - 79	2503	275.428	3666	351.228
80 - 84	1567	155.609	2624	246.278
85 +	768	75.508	1684	163.287
All ages	12831	1356.341	18274	1824.661
Age Groups				
35 - 49	512	54.821	592	65.788
50 - 64	2985	304.851	3689	389.784
Rates per million				
35 - 49	107.3150	104.2302	120.7178	117.3263
50 - 64	853.3448	854.7579	894.0863	886.8321
All ages	604.8649	556.1701	798.7935	684.9991

TABLE 89.

Mortality from Cerebral Haemorrhage (331) England & Wales 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.284	-	-
5 - 9	4	0.434	-	-
10 - 14	1	0.130	-	-
15 - 19	2	0.257	1	0.135
20 - 24	12	1.522	6	0.810
25 - 29	11	1.344	5	0.634
30 - 34	35	3.398	35	3.585
35 - 39	49	6.164	64	8.353
40 - 44	132	14.539	144	16.231
45 - 49	322	33.661	393	42.663
50 - 54	665	65.574	746	80.158
55 - 59	995	100.567	1135	118.378
60 - 64	1553	158.732	1792	183.755
65 - 69	2090	221.279	2598	263.274
70 - 74	2534	278.720	3572	350.917
75 - 79	2461	266.598	3855	360.177
80 - 84	1708	165.944	2704	238.623
85 +	750	65.767	1783	150.337
All ages	13326	1384.914	18833	1818.030
Age Groups				
35 - 49	503	54.364	601	67.247
50 - 64	3213	324.873	3673	382.291
Rates per million				
35 - 49	107.9863	103.3613	125.0260	119.9282
50 - 64	904.3062	910.9372	877.0296	869.7841
All ages	625.9865	567.8865	819.3248	682.5098

TABLE 90

Mortality from Cerebral Haemorrhage (331) England & Wales 1955 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	0.431	2	0.288
5 - 9	2	0.216	1	0.109
10 - 14	1	0.125	-	-
15 - 19	3	0.378	4	0.539
20 - 24	5	0.638	8	1.092
25 - 29	15	1.865	8	1.029
30 - 34	27	2.733	20	2.142
35 - 39	53	6.407	50	6.300
40 - 44	115	12.721	132	14.914
45 - 49	317	32.955	355	38.515
50 - 54	614	59.315	735	77.973
55 - 59	965	94.483	1118	114.711
60 - 64	1359	138.042	1666	169.062
65 - 69	1945	205.664	2477	249.620
70 - 74	2378	261.561	3547	345.293
75 - 79	2468	268.049	3780	346.301
80 - 84	1763	167.663	2868	244.635
85 +	828	68.883	1858	151.031
All ages	12861	1322.129	18629	1763.554
Age Groups				
35 - 49	485	52.083	537	59.729
50 - 64	2938	291.840	3519	361.746
Rates per million				
35 - 49	102.8196	99.0245	110.5848	106.5206
50 - 64	810.2592	818.3134	829.1706	823.0404
All ages	601.2903	542.1414	808.1294	662.0589

TABLE 91.

Mortality from Cerebral Haemorrhage (331) England & Wales 1956 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.287	4	0.575
5 - 9	2	0.217	-	-
10 - 14	2	0.239	2	0.244
15 - 19	-	-	1	0.136
20 - 24	9	1.145	5	0.691
25 - 29	16	2.000	9	1.172
30 - 34	27	2.818	23	2.552
35 - 39	51	5.938	43	5.217
40 - 44	120	13.514	142	16.334
45 - 49	313	32.519	342	37.060
50 - 54	573	54.397	720	75.519
55 - 59	986	93.229	1013	102.490
60 - 64	1420	142.906	1635	164.084
65 - 69	1916	201.316	2419	241.322
70 - 74	2273	250.012	3319	319.825
75 - 79	2426	262.806	3739	334.947
80 - 84	1641	152.826	2943	241.491
85 +	785	63.674	1833	143.832
All ages	12562	1279.843	18192	1687.491
Age Groups				
35 - 49	484	51.971	527	58.611
50 - 64	2979	290.532	3368	342.093
Rates per million				
35 - 49	102.0021	98.8115	107.8592	104.5268
50 - 64	804.4829	814.6457	783.9851	778.3261
All ages	583.8174	524.8020	785.8315	633.5039

TABLE 92.

Mortality from Cerebral Haemorrhage (331) England & Wales 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.283	2	0.284
5 - 9	1	0.115	4	0.466
10 - 14	3	0.330	3	0.337
15 - 19	1	0.124	2	0.271
20 - 24	4	0.511	12	1.661
25 - 29	13	1.636	7	0.920
30 - 34	19	2.038	23	2.630
35 - 39	49	5.509	45	5.277
40 - 44	137	15.915	138	16.298
45 - 49	288	29.977	337	36.606
50 - 54	627	58.704	761	79.123
55 - 59	1020	92.954	1077	107.395
60 - 64	1401	138.857	1559	154.265
65 - 69	1845	192.153	2310	227.535
70 - 74	2174	237.925	3167	300.779
75 - 79	2124	227.149	3494	305.732
80 - 84	1484	135.399	2772	217.901
85 +	778	58.702	1695	125.052
All ages	11970	1198.281	17408	1582.532
Age Groups				
35 - 49	474	51.401	520	58.181
50 - 64	3048	290.515	3397	340.783
Rates per million				
35 - 49	99.8525	97.7278	106.2743	103.7599
50 - 64	805.2840	814.5981	781.0991	775.3456
All ages	552.9379	491.3573	748.4414	594.1011

TABLE 93.

Mortality from Cerebral Haemorrhage (331) England & ales 1958
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.279	3	0.420
5 - 9	-	-	1	0.121
10 - 14	1	0.106	3	0.324
15 - 19	2	0.242	2	0.267
20 - 24	8	1.007	6	0.821
25 - 29	10	1.276	5	0.665
30 - 34	18	1.970	13	1.517
35 - 39	55	5.934	58	6.534
40 - 44	122	14.942	100	12.435
45 - 49	299	31.218	291	31.685
50 - 54	566	52.340	644	66.340
55 - 59	981	86.474	1012	99.412
60 - 64	1320	129.005	1545	150.651
65 - 69	1851	192.056	2370	231.146
70 - 74	2138	235.163	3178	299.171
75 - 79	2139	228.169	3734	322.240
80 - 84	1630	149.478	2943	224.427
85 +	781	57.590	1876	135.460
All ages	11923	1187.249	17784	1583.636
Age Groups				
35 - 49	476	52.094	449	50.654
50 - 64	2867	267.819	3201	316.403
Rates per million				
35 - 49	100.6768	99.0454	92.1215	90.3363
50 - 64	742.5537	750.9590	726.6742	719.8765
All ages	548.3351	486.8336	761.1384	594.5515

TABLE 94.

Mortality from Cerebral Haemorrhage (331) England & Wales 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	0.410	2	0.274
5 - 9	-	-	2	0.246
10 - 14	-	-	5	0.533
15 - 19	2	0.231	1	0.129
20 - 24	2	0.248	4	0.537
25 - 29	6	0.775	8	1.081
30 - 34	20	2.225	15	1.781
35 - 39	62	6.418	46	4.972
40 - 44	97	12.598	111	14.644
45 - 49	252	26.327	257	27.933
50 - 54	573	52.612	604	61.914
55 - 59	961	82.209	947	91.542
60 - 64	1370	130.767	1465	140.800
65 - 69	1793	184.882	2115	203.545
70 - 74	2071	227.793	3012	280.770
75 - 79	2031	216.64	3482	296.423
80 - 84	1452	132.479	2820	208.257
85 +	798	57.536	1895	133.289
All ages	11493	1134.159	16791	1468.670
Age Groups				
35 - 49	411	45.343	414	47.549
50 - 64	2904	265.588	3016	294.256
Rates per million				
35 - 49	87.2241	86.2098	85.1852	84.7988
50 - 64	737.8049	744.7033	676.8402	669.4879
All ages	525.1542	465.0640	714.4802	551.3559

TABLE 95

Mortality from Cerebral Haemorrhage (331) England & Wales 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	8	1.063	6	0.801
5 - 9	1	0.123	1	0.124
10 - 14	1	0.104	4	0.424
15 - 19	4	0.446	1	0.125
20 - 24	1	0.122	5	0.662
25 - 29	9	1.165	8	1.090
30 - 34	18	2.035	14	1.682
35 - 39	51	5.492	48	5.411
40 - 44	123	15.356	98	12.446
45 - 49	278	29.115	268	29.128
50 - 54	633	57.713	576	58.827
55 - 59	988	82.508	932	88.792
60 - 64	1389	128.094	1519	143.495
65 - 69	1777	181.428	2206	209.347
70 - 74	2139	233.703	3151	289.319
75 - 79	2041	216.062	3611	301.945
80 - 84	1414	126.444	2825	201.213
85 +	813	56.123	2032	135.884
All ages	13688	1137.096	17305	1480.715
Age Groups				
35 - 49	452	49.963	414	46.985
50 - 64	3010	268.315	3027	291.114
Rates per million				
35 - 49	96.2112	94.9937	85.4666	83.7930
50 - 64	749.5019	752.3497	671.6219	662.3393
All ages	620.2084	466.2683	730.6312	555.8778

TABLE 96.

Mortality from Cerebral Haemorrhage (331) England & Wales 1961 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.900	5	0.646
5 - 9	2	0.245	1	0.124
10 - 14	3	0.313	-	-
15 - 19	1	0.106	5	0.598
20 - 24	7	0.814	5	0.667
25 - 29	9	1.142	9	1.238
30 - 34	25	2.798	17	2.069
35 - 39	47	5.175	37	4.323
40 - 44	108	12.810	88	10.781
45 - 49	251	26.568	262	28.893
50 - 54	500	45.384	583	59.433
55 - 59	980	80.220	904	84.899
60 - 64	1398	124.591	1382	128.830
65 - 69	1800	180.013	2188	204.611
70 - 74	1953	213.027	2886	263.293
75 - 79	1987	209.285	3424	280.501
80 - 84	1454	130.671	2963	207.360
85 +	912	64.326	2068	136.943
All ages	11444	1098.388	16827	1415.209
Age Groups				
35 - 49	406	44.553	387	43.997
50 - 64	2878	250.195	2869	273.162
Rates per million				
35 - 49	86.2179	84.7078	80.3571	78.4642
50 - 64	704.1840	701.5416	630.5495	621.4951
All ages	512.1274	450.3960	706.4231	531.2861

TABLE 97.

Mortality from Cerebral Haemorrhage (331) England & Wales 1962
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	10	1.246	2	0.250
5 - 9	1	0.120	1	0.122
10 - 14	1	0.110	5	0.563
15 - 19	1	0.097	4	0.440
20 - 24	6	0.711	6	0.791
25 - 29	8	1.006	12	1.638
30 - 34	16	1.782	14	1.711
35 - 39	47	5.284	32	3.841
40 - 44	109	12.399	100	11.869
45 - 49	237	25.632	244	27.511
50 - 54	527	47.895	534	54.571
55 - 59	946	76.411	884	82.223
60 - 64	1349	116.725	1461	134.323
65 - 69	1822	177.716	2046	188.265
70 - 74	2062	223.061	3035	273.393
75 - 79	2035	213.803	3501	283.115
80 - 84	1458	130.379	3004	207.129
85 +	915	64.538	2251	144.138
All ages	11550	1098.915	17136	1415.893
Age Groups				
35 - 49	393	43.315	376	43.221
50 - 64	2822	241.031	2879	271.117
Rates per million				
35 - 49	83.2804	82.3540	78.5461	77.0803
50 - 64	681.9720	675.8460	628.6026	616.8423
All ages	509.9112	450.6121	713.4649	531.5428

TABLE 98.

Mortality from Cerebral Haemorrhage (331) England & Wales 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.846	5	0.607
5 - 9	4	0.472	-	-
10 - 14	2	0.226	1	0.116
15 - 19	5	0.465	4	0.421
20 - 24	13	1.509	5	0.639
25 - 29	5	0.619	5	0.669
30 - 34	20	2.211	16	1.974
35 - 39	26	2.946	31	3.823
40 - 44	121	13.131	108	12.332
45 - 49	221	25.449	231	27.453
50 - 54	458	42.110	548	55.878
55 - 59	975	78.262	889	82.552
60 - 64	1484	122.118	1403	127.818
65 - 69	1770	175.869	2113	193.711
70 - 74	2060	222.330	3061	272.668
75 - 79	2073	223.928	3575	288.603
80 - 84	1543	137.637	3267	223.071
85 +	967	66.541	2394	141.545
All ages	11754	1116.669	17656	1433.880
Age Groups				
35 - 49	368	41.526	370	43.608
50 - 64	2917	242.490	2840	266.248
Rates per million				
35 - 49	78.4983	78.9526	78.2986	77.7705
50 - 64	696.6303	679.9370	617.5390	605.7644
All ages	514.7586	457.8922	729.7767	538.2954

TABLE 99

Mortality from Cerebral Haemorrhage (331) England & Wales 1964 standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	11	1.294	7	0.826
5 - 9	-	-	2	0.235
10 - 14	1	0.115	6	0.707
15 - 19	6	0.548	3	0.312
20 - 24	8	0.901	5	0.624
25 - 29	13	1.589	6	0.790
30 - 34	22	2.441	12	1.506
35 - 39	57	6.524	31	3.895
40 - 44	112	11.845	95	10.602
45 - 49	214	25.531	225	27.904
50 - 54	485	44.564	511	51.988
55 - 59	946	75.267	771	71.171
60 - 64	1431	114.026	1346	120.585
65 - 69	1778	173.099	2057	185.873
70 - 74	2022	215.988	2866	251.790
75 - 79	2010	215.508	3386	268.026
80 - 84	1399	123.323	3038	202.507
85 +	875	58.235	2275	128.039
All ages	11390	1070.798	16642	1327.380
Age Groups				
35 - 49	383	43.900	351	42.401
50 - 64	2862	233.857	2628	243.744
Rates per million				
35 - 49	82.0990	83.4663	75.1236	75.6179
50 - 64	674.9841	655.7302	566.9291	554.5636
All ages	494.2782	439.0827	683.2364	498.3140

TABLE 100.

Mortality from Cerebral Haemorrhage (331) England & Wales 1965 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	10	1.146	5	0.575
5 - 9	3	0.339	-	-
10 - 14	1	0.117	6	0.716
15 - 19	4	0.363	4	0.414
20 - 24	5	0.546	2	0.242
25 - 29	10	1.237	12	1.563
30 - 34	18	2.004	13	1.641
35 - 39	42	4.850	49	6.239
40 - 44	137	14.821	86	9.858
45 - 49	233	27.243	196	24.016
50 - 54	536	49.348	413	42.095
55 - 59	883	69.842	766	70.352
60 - 64	1548	121.097	1383	122.119
65 - 69	1859	174.201	1980	176.028
70 - 74	2029	214.847	2833	244.995
75 - 79	1904	202.945	3428	267.418
80 - 84	1481	129.284	3027	196.728
85 +	896	58.375	2521	135.589
All ages	11599	1072.585	16724	1300.588
Age Groups				
35 - 49	412	46.914	331	40.113
50 - 64	2967	240.287	2562	234.566
Rates per million				
35 - 49	88.7568	89.1967	71.5660	71.5375
50 - 64	695.0920	673.7598	549.6439	533.6819
All ages	499.3757	439.8155	681.6162	488.2560

TABLE 101

Mortality from Cerebral Haemorrhage (331) England & Wales 1966
standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	9	1.109	6	0.681
5 - 9	3	0.328	2	0.222
10 - 14	1	0.117	2	0.240
15 - 19	2	0.183	3	0.310
20 - 24	2	0.210	7	0.819
25 - 29	10	1.221	9	1.177
30 - 34	26	2.906	9	1.144
35 - 39	43	4.981	30	3.858
40 - 44	115	12.872	69	8.220
45 - 49	218	24.390	180	21.224
50 - 54	519	48.589	452	46.897
55 - 59	888	70.031	753	68.836
60 - 64	1396	108.018	1309	114.064
65 - 69	1836	165.113	1989	174.789
70 - 74	2123	223.571	2921	249.185
75 - 79	1989	211.467	3609	278.958
80 - 84	1503	131.140	3323	211.555
85 +	1072	69.701	2703	141.237
All ages	11755	1075.857	17376	1323.416
Age Groups				
35 - 49	376	42.243	279	33.302
50 - 64	2803	226.638	2514	229.797
Rates per million				
35 - 49	80.9194	80.3158	60.5784	59.3908
50 - 64	657.8422	635.4883	539.6124	522.8315
All ages	502.5136	441.1571	703.9691	496.8259

TABLE 102.

Mortality from Cerebral Embolism (332) England & Wales 1947 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	9	1.206	1	0.134
5 - 9	-	-	-	-
10 - 14	1	0.140	-	-
15 - 19	1	0.118	-	-
20 - 24	1	0.111	1	0.123
25 - 29	3	0.340	1	0.116
30 - 34	6	0.617	6	0.650
35 - 39	6	0.618	16	1.739
40 - 44	24	2.660	28	3.192
45 - 49	60	7.113	76	8.805
50 - 54	197	23.681	204	24.123
55 - 59	375	40.368	431	48.693
60 - 64	819	86.133	781	85.756
65 - 69	1472	156.647	1519	166.296
70 - 74	2064	233.286	2381	268.736
75 - 79	2112	259.744	2782	323.572
80 - 84	1463	176.483	2283	254.237
85 +	841	95.741	1724	187.226
All ages	9454	1085.006	12234	1373.398
Age Groups.				
35 - 49	90	10.391	120	13.736
50 - 64	1391	150.182	1416	158.572
Rates per million				
35 - 49	18.8719	19.7562	24.1255	24.4968
50 - 64	435.2315	421.1072	367.1247	360.0781
All ages	454.0390	444.9087	550.3868	515.5897

TABLE 103.

Mortality from Cerebral Embolism (332) England & Wales 1948 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	5	0.646	6	0.777
5 - 9	-	-	1	0.139
10 - 14	1	0.138	-	-
15 - 19	1	0.119	-	-
20 - 24	-	-	3	0.375
25 - 29	1	0.108	2	0.224
30 - 34	5	0.538	8	0.914
35 - 39	16	1.647	13	1.420
40 - 44	23	2.504	22	2.484
45 - 49	51	5.885	79	9.043
50 - 54	137	16.102	213	24.905
55 - 59	358	38.324	373	41.622
60 - 64	751	78.476	753	81.974
65 - 69	1326	140.569	1367	147.726
70 - 74	1943	216.254	2222	243.727
75 - 79	2001	235.696	2654	296.481
80 - 84	1344	152.892	2209	233.929
85 +	740	77.449	1637	164.610
All ages	8703	967.347	11562	1250.350
Age Groups.				
35 - 49	90	10.036	114	12.947
50 - 64	1246	132.902	1339	148.501
Rates per million				
35 - 49	18.6066	19.0813	22.7954	23.0897
50 - 64	385.1623	372.6545	343.4214	337.8678
All ages	412.6405	396.6624	515.9073	469.3961

TABLE 104.

Mortality from Cerebral Embolism (332) England & Wales 1949 standardised on 1951 Scottish Population.

Age in years.	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	0.765	2	0.256
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	1	0.134
20 - 24	-	-	1	0.126
25 - 29	2	0.208	3	0.326
30 - 34	4	0.454	6	0.727
35 - 39	10	1.031	11	1.206
40 - 44	38	4.083	40	4.479
45 - 49	73	8.232	63	7.143
50 - 54	147	16.753	190	21.819
55 - 59	398	42.566	397	43.996
60 - 64	809	84.090	855	92.209
65 - 69	1430	151.594	1514	161.848
70 - 74	2213	244.643	2557	275.187
75 - 79	2311	265.478	3102	337.200
80 - 84	1699	187.349	2654	273.821
85 +	926	92.444	2004	194.316
All ages	10066	1099.690	13400	1414.793
Age Groups				
35 - 49	121	13.346	114	12.828
50 - 64	1354	143.409	1442	158.024
Rates per million				
35 - 49	24.7444	25.3745	22.6911	22.8774
50 - 64	412.9308	402.1159	365.5260	359.5344
All ages	473.9394	450.9299	594.3404	531.1299

TABLE 105.

Mortality from Cerebral Embolism (332) England & Wales 1950
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.507	4	0.507
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.129	2	0.271
20 - 24	2	0.234	1	0.127
25 - 29	2	0.222	-	-
30 - 34	4	0.443	5	0.584
35 - 39	8	0.834	12	1.321
40 - 44	17	1.818	27	3.006
45 - 49	77	8.507	86	9.685
50 - 54	183	20.195	192	21.661
55 - 59	396	42.158	426	46.746
60 - 64	883	91.202	883	94.428
65 - 69	1557	164.847	1671	177.069
70 - 74	2577	283.449	2846	300.253
75 - 79	2675	299.881	3483	368.689
80 - 84	2014	214.199	3279	331.002
85 +	1110	105.923	2414	226.001
All ages	11510	1234.548	15331	1581.350
Age Groups				
35 - 49	102	11.159	125	14.012
50 - 64	1462	153.555	1501	162.835
Rates per million				
35 - 49	20.7739	21.2164	24.8114	24.9890
50 - 64	438.9072	430.5651	375.8137	370.4803
All ages	543.7195	506.2287	676.5367	593.6573

TABLE 106.

Mortality from Cerebral Embolism (332) England & Wales 1951
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.508	2	0.254
5 - 9	1	0.125	1	0.127
10 - 14	-	-	2	0.274
15 - 19	-	-	1	0.136
20 - 24	-	-	1	0.129
25 - 29	1	0.116	3	0.354
30 - 34	7	0.767	7	0.799
35 - 39	7	0.759	7	0.786
40 - 44	29	3.111	27	3.004
45 - 49	74	7.973	83	9.220
50 - 54	198	21.306	216	24.205
55 - 59	406	42.946	445	48.248
60 - 64	982	101.427	917	96.601
65 - 69	1676	178.586	1814	189.824
70 - 74	2675	298.739	2984	303.595
75 - 79	3084	345.732	3968	404.863
80 - 84	2212	233.873	3475	354.613
85 +	1326	145.837	2567	263.993
All ages	12682	1381.805	16520	1701.025
Age Groups				
35 - 49	110	11.843	117	13.010
50 - 64	1586	165.679	1578	169.054
Rates per million				
35 - 49	22.5502	22.5169	23.2743	23.2020
50 - 64	470.8435	464.5605	390.7875	384.6297
All ages	602.4989	566.6117	726.1219	638.5847

TABLE 107

Mortality from Cerebral Embolism (332) England & Wales 1952
standardised on 1951 Scottish Population

Age in years.	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	9	1.213	2	0.269
5 - 9	1	0.115	-	-
10 - 14	-	-	-	-
15 - 19	2	0.260	-	-
20 - 24	-	-	-	-
25 - 29	3	0.358	-	-
30 - 34	4	0.422	5	0.553
35 - 39	11	1.232	15	1.737
40 - 44	30	3.239	31	3.465
45 - 49	71	7.520	89	9.797
50 - 54	213	22.249	262	28.972
55 - 59	426	44.293	479	51.435
60 - 64	960	98.636	924	96.460
65 - 69	1777	188.380	1834	190.455
70 - 74	2662	296.278	3189	319.519
75 - 79	3278	362.619	4172	410.133
80 - 84	2289	232.443	3588	350.835
85 +	1336	137.608	2823	277.699
All ages	13072	1396.865	17413	1741.329
Age Groups				
35 - 49	112	11.991	135	14.999
50 - 64	1599	165.178	1665	176.867
Rates per million.				
35 - 49	23.1262	22.7983	27.0976	26.7492
50 - 64	465.5022	463.1557	407.8883	402.4058
All ages	618.9687	572.7871	763.0252	653.7153

TABLE 108.

Mortality from Cerebral Embolism (332) England & Wales 1953 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardisation	Crude	Standardisation
0 - 4	3	0.419	6	0.837
5 - 9	1	0.111	-	-
10 - 14	-	-	-	-
15 - 19	-	-	2	0.269
20 - 24	2	0.253	2	0.265
25 - 29	1	0.121	4	0.499
30 - 34	1	0.101	5	0.533
35 - 39	14	1.655	11	1.346
40 - 44	30	3.266	29	3.253
45 - 49	68	7.091	78	8.508
50 - 54	208	21.154	223	24.353
55 - 59	450	45.802	393	41.708
60 - 64	963	98.737	799	82.799
65 - 69	1655	175.223	1776	182.864
70 - 74	2634	293.659	2977	295.857
75 - 79	3124	343.762	4205	402.868
80 - 84	2422	240.514	3617	339.477
85 +	1340	131.746	2898	281.002
All ages	12916	1363.614	17025	1666.438
Age Groups				
35 - 49	112	12.012	118	13.107
50 - 64	1621	165.693	1415	148.860
Rates per million				
35 - 49	23.4752	22.8382	24.0620	23.3750
50 - 64	463.4077	464.5998	342.9472	338.6846
All ages	608.8719	559.1524	744.1972	625.6004

TABLE 109.

Mortality from Cerebral Embolism (332) England & Wales 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.284	5	0.710
5 - 9	1	0.109	1	0.110
10 - 14	1	0.130	-	-
15 - 19	1	0.129	2	0.270
20 - 24	1	0.127	-	-
25 - 29	3	0.367	3	0.380
30 - 34	4	0.388	6	0.615
35 - 39	8	1.006	12	1.566
40 - 44	29	3.194	27	3.043
45 - 49	89	9.304	75	8.142
50 - 54	225	22.187	220	23.639
55 - 59	442	44.674	441	45.995
60 - 64	981	100.268	879	90.134
65 - 69	1789	189.410	1897	192.236
70 - 74	2732	300.498	3316	325.767
75 - 79	3426	371.135	4367	408.013
80 - 84	2579	250.568	3903	344.432
85 +	1482	129.955	3138	264.587
All ages	13795	1423.733	18292	1709.639
Age Groups				
35 - 49	126	13.504	114	12.751
50 - 64	1648	167.129	1540	159.768
Rates per million				
35 - 49	27.0502	25.6749	23.7154	22.7401
50 - 64	463.8334	468.6263	367.7173	363.5023
All ages	648.0177	583.8043	795.7887	641.8185

TABLE 110

Mortality from Cerebral Embolism (332) England & Wales 1955 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.288	1	0.144
5 - 9	1	0.108	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	1	0.137
25 - 29	3	0.373	2	0.257
30 - 34	6	0.607	6	0.643
35 - 39	16	1.934	19	2.394
40 - 44	18	1.991	37	4.180
45 - 49	97	10.084	75	8.137
50 - 54	235	22.702	195	20.687
55 - 59	472	46.214	425	43.607
60 - 64	989	100.459	913	92.649
65 - 69	1916	202.598	1897	191.170
70 - 74	2848	313.257	3484	339.160
75 - 79	3580	388.824	4670	427.837
80 - 84	2934	279.026	4395	374.885
85 +	1696	141.094	3529	286.862
All ages	14813	1509.559	19649	1792.749
Age Groups				
35 - 49	131	14.009	131	14.711
50 - 64	1696	169.375	1533	156.943
Rates per million				
35 - 49	27.7719	26.6351	26.9769	26.2356
50 - 64	467.7330	474.9240	361.2158	357.0749
All ages	692.5522	618.9975	852.3772	673.0190

TABLE 111.

Mortality from Cerebral Embolism (332) England & Wales 1956 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	0.143	1	0.144
5 - 9	-	-	1	0.109
10 - 14	-	-	-	-
15 - 19	-	-	1	0.136
20 - 24	-	-	1	0.138
25 - 29	-	-	3	0.391
30 - 34	1	0.104	3	0.333
35 - 39	5	0.582	10	1.213
40 - 44	21	2.365	29	3.336
45 - 49	77	8.000	84	9.102
50 - 54	197	18.702	180	18.800
55 - 59	495	46.804	456	46.136
60 - 64	1022	102.852	923	92.630
65 - 69	1883	197.849	1826	182.164
70 - 74	2829	311.167	3461	333.509
75 - 79	3610	391.068	4937	442.266
80 - 84	2893	269.425	4531	371.796
85 +	1757	142.516	3919	307.516
All ages	14791	1491.577	20366	1809.799
Age Groups				
35 - 49	103	10.947	123	13.651
50 - 64	1714	168.358	1559	157.646
Rates per million				
35 - 49	21.7071	20.8133	25.1740	24.3452
50 - 64	462.8679	472.0724	362.8957	358.6744
All ages	687.4099	611.6239	879.7408	679.4198

TABLE 112.

Mortality from Cerebral Embolism (332) England & Wales 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	0.850	7	0.995
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	1	0.136
20 - 24	2	0.255	1	0.138
25 - 29	1	0.126	2	0.263
30 - 34	5	0.536	4	0.457
35 - 39	5	0.562	13	1.524
40 - 44	23	2.672	31	3.661
45 - 49	81	8.431	79	8.581
50 - 54	203	19.006	182	18.923
55 - 59	499	45.474	443	44.175
60 - 64	1017	100.798	949	93.904
65 - 69	1900	197.881	1918	188.923
70 - 74	2848	311.688	3527	334.970
75 - 79	3530	377.512	4905	429.197
80 - 84	3027	276.180	4872	382.978
85 +	1767	133.325	3872	285.665
All ages	14914	1475.296	20806	1794.490
Age Groups.				
35 - 49	109	11.665	123	13.766
50 - 64	1719	165.278	1574	157.002
Rates per million				
35 - 49	22.9619	22.1785	25.1380	24.5503
50 - 64	454.1612	463.4361	361.9223	357.2092
All ages	688.9320	604.9478	894.5354	673.6726

TABLE 113.

Mortality from Cerebral Embolism (332) England & Wales 1958 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.558	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	-	-	1	0.137
25 - 29	3	0.383	3	0.399
30 - 34	4	0.438	4	0.467
35 - 39	8	0.863	13	1.465
40 - 44	30	3.674	24	2.984
45 - 49	73	7.622	66	7.186
50 - 54	244	22.563	170	17.512
55 - 59	542	47.777	431	42.338
60 - 64	951	92.942	899	87.661
65 - 69	1872	194.235	1902	185.502
70 - 74	3000	329.976	3521	331.460
75 - 79	3605	384.549	5114	441.333
80 - 84	3112	285.383	5192	395.932
85 +	2004	147.773	4330	312.656
All ages	15452	1518.736	21670	1827.032
Age Groups				
35 - 49	111	12.159	103	11.635
50 - 64	1737	163.282	1500	147.511
Rates per million				
35 - 49	23.4772	23.1177	21.1325	20.7498
50 - 64	449.8834	457.8394	340.5221	335.6153
All ages	710.6328	622.7605	927.4555	685.8892

TABLE 114.

Mortality from Cerebral Embolism (332) England & Wales 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	5	0.683	4	0.548
5 - 9	1	0.122	-	-
10 - 14	-	-	-	-
15 - 19	-	-	1	0.129
20 - 24	1	0.124	2	0.268
25 - 29	4	0.517	-	-
30 - 34	3	0.334	7	0.831
35 - 39	11	1.139	10	1.081
40 - 44	26	3.377	20	2.639
45 - 49	80	8.358	57	6.195
50 - 54	216	19.833	170	17.426
55 - 59	605	51.755	422	40.793
60 - 64	1056	100.795	935	89.862
65 - 69	1763	181.788	1883	181.218
70 - 74	2849	313.367	3469	323.370
75 - 79	3527	376.229	5165	439.696
80 - 84	3165	288.771	5285	390.297
85 +	2029	146.291	4433	311.804
All ages	15341	1493.483	21863	1806.157
Age Groups				
35 - 49	117	12.874	87	9.915
50 - 64	1877	172.383	1527	148.081
Rates per million				
35 - 49	24.8302	24.4771	17.9012	17.6824
50 - 64	476.8801	483.3584	342.6840	336.9122
All ages	700.9824	612.4055	930.3008	678.0525

TABLE 115.

Mortality from Cerebral Embolism (332) England & Wales 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.930	4	0.534
5 - 9	1	0.123	-	-
10 - 14	-	-	-	-
15 - 19	1	0.112	-	-
20 - 24	2	0.244	1	0.132
25 - 29	1	0.129	1	0.136
30 - 34	8	0.904	3	0.360
35 - 39	13	1.400	13	1.465
40 - 44	28	3.496	22	2.794
45 - 49	79	8.274	51	5.543
50 - 54	230	20.970	164	16.749
55 - 59	528	44.093	394	37.536
60 - 64	1109	102.272	943	89.082
65 - 69	1847	188.575	1822	172.906
70 - 74	2850	311.385	3333	306.029
75 - 79	3465	366.808	5139	429.713
80 - 84	3061	273.724	5412	385.475
85 +	2020	139.445	4740	316.973
All ages	15250	1462.884	22042	1765.427
Age Groups				
35 - 49	120	13.170	86	9.802
50 - 64	1867	167.335	1501	143.367
Rates per million				
35 - 49	25.5428	25.0399	17.7539	17.4809
50 - 64	464.8904	469.2039	333.0375	326.1870
All ages	690.9832	599.8583	930.6312	662.7620

TABLE 116.

Mortality from Cerebral Embolism (332) England & Wales 1961
standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	0.386	1	0.129
5 - 9	-	-	1	0.124
10 - 14	-	-	-	-
15 - 19	1	0.106	-	-
20 - 24	-	-	-	-
25 - 29	1	0.127	1	0.138
30 - 34	2	0.224	2	0.243
35 - 39	9	0.991	9	1.051
40 - 44	31	3.677	18	2.205
45 - 49	76	8.044	59	6.506
50 - 54	224	20.332	153	15.597
55 - 59	583	47.723	394	37.003
60 - 64	1102	98.211	879	81.940
65 - 69	1810	181.013	1896	177.304
70 - 74	2871	313.160	3496	318.944
75 - 79	3406	358.744	5098	417.638
80 - 84	3022	271.587	5464	382.387
85 +	2170	153.057	4897	324.279
All ages	15311	1457.382	22368	1765.488
Age Groups				
35 - 49	116	12.712	86	9.762
50 - 64	1909	166.266	1426	134.540
Rates per million				
35 - 49	24.6337	24.1691	17.8571	17.4095
50 - 64	467.0908	466.2064	313.4066	306.1039
All ages	685.1785	597.6022	939.0428	662.7849

TABLE 117.

Mortality from Cerebral Embolism (332) England & Wales 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	2	0.221	1	0.113
15 - 19	3	0.291	1	0.110
20 - 24	-	-	3	0.395
25 - 29	3	0.377	1	0.137
30 - 34	3	0.334	6	0.733
35 - 39	8	0.899	11	1.320
40 - 44	34	3.868	32	3.798
45 - 49	66	7.138	51	5.750
50 - 54	211	19.176	146	14.920
55 - 59	580	46.848	368	34.229
60 - 64	1103	95.439	848	77.964
65 - 69	1859	181.325	1768	162.684
70 - 74	2853	308.629	3506	315.820
75 - 79	3385	355.638	5031	406.842
80 - 84	3087	276.049	5436	374.818
85 +	2211	155.948	5255	336.493
Age Groups				
35 - 49	108	11.905	94	10.868
50 - 64	1894	161.463	1362	127.113
Rates per million				
35 - 49	22.8862	22.6348	19.6365	19.3820
50 - 64	457.7090	452.7389	297.3799	289.2061
All ages	680.2348	595.4691	935.2985	651.7621

TABLE 118.

Mortality from Cerebral Embolism (332) England & Wales 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	3	0.363	2	0.243
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	1	0.116	-	-
25 - 29	2	0.248	3	0.401
30 - 34	4	0.442	2	0.247
35 - 39	9	1.020	5	0.617
40 - 44	32	3.473	25	2.855
45 - 49	75	8.637	52	6.180
50 - 54	193	17.745	147	14.989
55 - 59	540	43.345	370	34.358
60 - 64	1124	92.494	859	78.257
65 - 69	1887	187.494	1837	168.409
70 - 74	2910	314.068	3446	306.963
75 - 79	3421	369.540	5130	414.135
80 - 84	3162	282.054	5743	392.132
85 +	2356	162.121	5518	326.252
All ages	15719	1483.160	23139	1746.038
Age Groups				
35 - 49	116	13.130	82	9.652
50 - 64	1857	153.584	1376	127.604
Rates per million				
35 - 49	24.7440	24.9638	17.3527	17.2134
50 - 64	443.4839	430.6464	299.2020	290.3232
All ages	688.4032	608.1725	956.4060	655.4832

TABLE 119

Mortality from Cerebral Embolism (332) England & Wales 1964 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	0.588	4	0.472
5 - 9	-	-	1	0.117
10 - 14	-	-	-	-
15 - 19	1	0.091	-	-
20 - 24	3	0.338	2	0.250
25 - 29	2	0.245	-	-
30 - 34	3	0.333	7	0.878
35 - 39	4	0.458	5	0.628
40 - 44	25	2.644	21	2.344
45 - 49	65	7.755	54	6.697
50 - 54	211	19.388	125	12.717
55 - 59	542	43.123	285	26.308
60 - 64	1121	89.325	764	68.445
65 - 69	1648	160.443	1553	140.331
70 - 74	2477	264.591	3055	268.394
75 - 79	2968	318.223	4477	354.386
80 - 84	2578	227.253	5006	333.690
85 +	1921	127.850	4814	270.937
All ages	13574	1262.648	20173	1486.594
Age Groups				
35 - 49	94	10.857	80	9.669
50 - 64	1874	151.836	1174	107.470
Rates per million				
35 - 49	20.1496	20.6422	17.1222	17.2437
50 - 64	441.9707	425.7450	253.2629	244.5145
All ages	589.0547	517.7511	828.2014	558.0848

TABLE 120.

Mortality from Cerebral Embolism (332) England & Wales 1965 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.459	4	0.460
5 - 9	-	-	2	0.229
10 - 14	1	0.117	-	-
15 - 19	1	0.091	-	-
20 - 24	1	0.109	2	0.242
25 - 29	6	0.730	1	0.150
30 - 34	2	0.223	7	0.884
35 - 39	8	0.924	10	1.273
40 - 44	31	3.354	32	3.668
45 - 49	69	8.068	48	5.881
50 - 54	179	16.480	124	12.639
55 - 59	479	37.887	334	30.676
60 - 64	1148	89.806	805	71.082
65 - 69	1886	176.731	1607	142.867
70 - 74	2720	288.015	3193	276.127
75 - 79	3135	334.157	4729	368.909
80 - 84	2023	246.434	5387	350.107
85 +	2329	151.737	5664	304.655
All ages	14822	1355.322	21949	1569.807
Age Groups				
35 - 49	108	12.346	90	10.822
50 - 64	1806	144.173	1263	114.397
Rates per million				
35 - 49	23.2663	23.4732	19.4590	19.2999
50 - 64	423.0994	404.2581	270.9603	260.2748
All ages	638.1366	555.7523	894.5703	589.3240

TABLE 120.

Mortality from Cerebral Embolism (332) England & Wales 1965
standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.459	4	0.460
5 - 9	-	-	2	0.229
10 - 14	1	0.117	-	-
15 - 19	1	0.091	-	-
20 - 24	1	0.109	2	0.242
25 - 29	6	0.730	1	0.130
30 - 34	2	0.223	7	0.884
35 - 39	8	0.924	10	1.273
40 - 44	31	3.354	32	3.663
45 - 49	69	8.068	48	5.881
50 - 54	179	16.480	124	12.639
55 - 59	479	37.887	334	30.676
60 - 64	1148	89.806	805	71.082
65 - 69	1886	176.731	1607	142.867
70 - 74	2720	288.015	3193	276.127
75 - 79	3135	334.157	4739	368.909
80 - 84	2823	246.434	5387	350.107
85 +	2529	151.737	5664	304.655
All ages	14822	1355.322	21949	1569.807
Age Groups				
35 - 49	108	12.346	90	10.822
50 - 64	1806	144.173	1263	114.397
Rates per million				
35 - 49	23.2663	23.4732	19.4590	19.2999
50 - 64	423.0994	404.2581	270.9603	260.2748
All ages	638.1366	555.7523	894.5703	589.3240

TABLE 121.

Mortality from Cerebral Embolism (332) England & Wales 1966 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	6	0.679	6	0.681
5 - 9	-	-	-	-
10 - 14	1	0.117	-	-
15 - 19	3	0.274	-	-
20 - 24	1	0.105	1	0.117
25 - 29	1	0.122	2	0.262
30 - 34	6	0.671	6	0.762
35 - 39	15	1.737	12	1.543
40 - 44	30	3.358	26	3.097
45 - 49	75	8.391	68	8.018
50 - 54	177	16.571	109	11.309
55 - 59	480	37.855	306	27.973
60 - 64	1132	87.591	734	63.959
65 - 69	1903	171.139	1573	138.232
70 - 74	2606	274.435	3111	265.393
75 - 79	3109	330.543	4667	360.736
80 - 84	2744	239.419	5211	331.753
85 +	2280	148.246	5682	296.896
All ages	14569	1321.253	21514	1510.731
Age Groups				
35 - 49	320	13.486	106	12.658
50 - 64	1789	142.017	1149	103.241
Rates per million				
35 - 49	25.8253	25.6407	23.0155	22.5743
50 - 64	419.8643	398.2127	246.6247	234.8927
All ages	622.8091	541.7822	871.6155	567.1461

TABLE 122.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1950 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	14	1.776	4	0.507
5 - 9	1	0.130	1	0.131
10 - 14	4	0.542	1	0.137
15 - 19	3	0.386	3	0.407
20 - 24	12	1.403	13	1.653
25 - 29	15	1.661	20	2.292
30 - 34	24	2.657	20	2.337
35 - 39	34	3.545	55	6.052
40 - 44	55	5.882	68	7.571
45 - 49	87	9.612	101	11.374
50 - 54	84	9.270	95	10.718
55 - 59	83	8.836	90	9.876
60 - 64	94	9.709	134	14.330
65 - 69	66	6.988	136	14.411
70 - 74	44	4.840	120	12.660
75 - 79	36	4.036	83	8.786
80 - 84	8	0.851	49	4.946
85 +	6	0.573	13	1.217
All ages	670	72.697	1006	109.405
Age Groups				
35 - 49	176	19.039	224	24.997
50 - 64	261	27.815	319	34.924
Rates per million				
35 - 49	35.8452	36.1985	44.4621	44.5796
50 - 64	78.3548	77.9927	79.8698	79.4587
All ages	31.6501	29.8095	44.3935	41.0719

TABLE 123.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	0.762	6	0.761
5 - 9	2	0.250	2	0.253
10 - 14	6	0.815	5	0.695
15 - 19	6	0.780	4	0.545
20 - 24	13	1.622	12	1.549
25 - 29	36	4.161	13	1.535
30 - 34	26	2.849	26	2.969
35 - 39	44	4.773	44	4.939
40 - 44	74	7.939	71	7.900
45 - 49	76	8.188	120	13.331
50 - 54	127	13.666	137	15.352
55 - 59	93	9.837	155	16.806
60 - 64	115	11.878	173	18.225
65 - 69	84	8.951	178	18.627
70 - 74	60	6.701	133	13.532
75 - 79	36	4.036	92	9.387
80 - 84	19	2.009	48	4.898
85 +	8	0.880	12	1.234
All ages	831	90.096	1231	132.528
Age Groups				
35 - 49	194	20.899	235	26.170
50 - 64	335	35.381	465	50.383
Rates per million				
35 - 49	39.7704	39.7349	46.7476	46.6716
50 - 64	99.3770	99.2076	115.1560	114.6308
All ages	39.4793	36.9440	54.1075	49.7526

TABLE 124.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1952 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.943	4	0.539
5 - 9	7	0.807	1	0.116
10 - 14	9	1.218	9	1.254
15 - 19	14	1.820	15	2.043
20 - 24	22	2.794	17	2.219
25 - 29	36	4.293	24	2.924
30 - 34	39	4.117	38	4.203
35 - 39	66	7.392	66	7.645
40 - 44	71	7.666	103	11.514
45 - 49	120	12.710	158	17.392
50 - 54	133	13.893	177	19.572
55 - 59	121	12.581	190	20.402
60 - 64	117	12.021	227	23.697
65 - 69	111	11.767	226	23.469
70 - 74	66	7.346	172	17.233
75 - 79	49	5.420	119	11.698
80 - 84	23	2.336	62	6.062
85 +	3	0.309	25	2.459
All ages	1014	109.435	1633	174.421
Age Groups				
35 - 49	257	27.768	327	36.551
50 - 64	371	38.495	594	63.671
Rates per million				
35 - 49	53.0663	52.7948	65.6363	65.1850
50 - 64	108.0058	107.9392	145.5169	144.8635
All ages	48.0136	44.8732	71.5569	65.4797

TABLE 125.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1953 standardised on 1951 Scottish Population.

Age in years.	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.977	5	0.698
5 - 9	2	0.222	4	0.448
10 - 14	7	0.931	8	1.083
15 - 19	10	1.289	16	2.155
20 - 24	30	3.791	23	3.043
25 - 29	32	3.875	32	3.993
30 - 34	45	4.561	54	5.760
35 - 39	54	6.384	49	5.995
40 - 44	88	9.582	102	11.443
45 - 49	123	12.826	157	17.126
50 - 54	153	15.560	176	19.320
55 - 59	125	12.723	169	17.935
60 - 64	120	12.304	208	21.555
65 - 69	111	11.752	209	21.519
70 - 74	68	7.581	192	19.081
75 - 79	59	6.492	125	11.976
80 - 84	20	1.986	72	6.758
85 +	4	0.393	17	1.648
All ages	1058	113.229	1618	171.436
Age Groups				
35 - 49	265	28.792	308	34.564
50 - 64	398	40.587	553	58.710
Rates per million				
35 - 49	55.5439	54.7417	62.8059	61.6414
50 - 64	113.7793	113.8051	134.0281	133.5763
All ages	49.8751	46.4298	70.7261	64.3591

TABLE 126.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	7	0.994	3	0.426
5 - 9	4	0.434	1	0.110
10 - 14	13	1.684	13	1.711
15 - 19	12	1.543	11	1.482
20 - 24	27	3.425	15	2.025
25 - 29	32	3.911	33	4.182
30 - 34	55	6.339	52	5.326
35 - 39	55	6.919	57	7.440
40 - 44	89	9.803	119	13.413
45 - 49	140	14.635	142	15.415
50 - 54	180	17.749	190	20.416
55 - 59	146	14.757	206	21.485
60 - 64	162	16.558	239	24.508
65 - 69	115	12.176	229	23.206
70 - 74	83	9.129	198	19.452
75 - 79	55	5.958	151	14.108
80 - 84	21	2.040	63	5.560
85 +	15	1.315	25	2.108
All ages	1211	128.369	1747	182.373
Age Groups				
35 - 49	284	31.357	318	36.268
50 - 64	488	49.064	635	66.409
Rates per million				
35 - 49	60.9704	59.6185	66.1535	64.6803
50 - 64	137.3487	137.5744	151.6237	151.0930
All ages	56.8865	52.6379	76.0028	68.4650

TABLE 127

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1955 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	10	1.458	3	0.432
5 - 9	4	0.433	2	0.218
10 - 14	10	1.253	6	0.765
15 - 19	13	1.636	7	0.943
20 - 24	20	2.552	25	3.413
25 - 29	18	2.238	35	4.504
30 - 34	46	4.657	40	4.285
35 - 39	49	5.924	55	6.678
40 - 44	72	7.964	137	15.479
45 - 49	138	14.346	156	16.925
50 - 54	156	15.070	205	21.748
55 - 59	133	13.022	224	22.985
60 - 64	158	16.049	236	23.949
65 - 69	104	10.997	245	24.690
70 - 74	79	8.689	206	20.054
75 - 79	45	4.887	157	14.383
80 - 84	30	2.853	77	6.568
85 +	9	0.749	42	3.414
All ages	1094	114.757	1856	191.431
Age Groups				
35 - 49	259	28.234	346	39.082
50 - 64	447	44.141	665	68.680
Rates per million				
35 - 49	54.9078	53.6809	71.2521	69.6988
50 - 64	123.2763	123.7709	156.6918	156.2600
All ages	51.1478	47.0563	80.5136	71.8654

TABLE 128

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1956
standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	15	2.151	8	1.150
5 - 9	5	0.542	4	0.438
10 - 14	16	1.915	17	2.077
15 - 19	16	2.027	11	1.493
20 - 24	25	3.180	16	2.210
25 - 29	31	3.876	27	3.517
30 - 34	42	4.384	50	5.547
35 - 39	67	7.801	78	9.463
40 - 44	116	13.064	111	12.768
45 - 49	130	13.506	164	17.772
50 - 54	169	16.044	191	20.033
55 - 59	188	17.776	252	25.496
60 - 64	142	14.291	224	22.480
65 - 69	108	11.348	233	23.244
70 - 74	74	8.139	215	20.718
75 - 79	59	6.391	154	13.796
80 - 84	31	2.887	104	8.534
85 +	10	0.811	43	3.314
All ages	1244	130.133	1902	194.110
Age Groups				
35 - 49	313	34.371	353	40.003
50 - 64	499	48.111	667	68.009
Rates per million				
35 - 49	65.9642	65.3490	72.2472	71.3413
50 - 64	134.7556	134.9023	155.2607	154.7333
All ages	57.8148	53.3613	82.1598	72.8712

TABLE 129

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	12	1.701	5	0.711
5 - 9	4	0.461	4	0.466
10 - 14	13	1.430	5	0.561
15 - 19	16	1.984	10	1.357
20 - 24	17	2.170	9	1.246
25 - 29	36	4.532	21	2.761
30 - 34	45	4.826	42	4.802
35 - 39	70	7.870	67	7.857
40 - 44	79	9.177	98	11.574
45 - 49	125	13.011	200	21.725
50 - 54	143	13.389	228	23.706
55 - 59	191	17.406	233	23.234
60 - 64	144	14.272	220	21.769
65 - 69	130	13.539	244	24.034
70 - 74	78	8.536	224	21.274
75 - 79	51	5.454	176	15.400
80 - 84	28	2.555	78	6.131
85 +	11	0.830	38	2.804
All ages	1193	123.143	1902	191.412
Age Groups				
35 - 49	274	30.058	365	41.156
50 - 64	478	45.067	681	68.709
Rates per million				
35 - 49	57.7207	57.1487	74.5964	73.3976
50 - 64	126.2880	126.3669	156.5877	156.3259
All ages	55.1090	50.4950	81.7748	71.8583

TABLE 130.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1958 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	12	1.673	2	0.280
5 - 9	3	0.358	2	0.241
10 - 14	5	0.530	10	1.080
15 - 19	18	2.182	8	1.068
20 - 24	18	2.266	15	2.052
25 - 29	28	3.573	27	3.590
30 - 34	50	5.471	41	4.785
35 - 39	77	8.307	85	9.576
40 - 44	77	9.430	111	13.803
45 - 49	133	13.886	165	17.966
50 - 54	162	14.981	217	22.354
55 - 59	211	18.599	267	26.228
60 - 64	136	13.291	248	24.182
65 - 69	112	11.621	267	26.041
70 - 74	75	8.249	230	21.652
75 - 79	61	6.507	192	16.569
80 - 84	27	2.476	102	7.778
85 +	9	0.664	50	3.610
All ages	1214	124.064	2039	202.855
Age Groups				
35 - 49	287	31.623	361	41.345
50 - 64	509	46.871	732	72.764
Rates per million				
35 - 49	60.7022	60.1242	74.0665	73.7346
50 - 64	131.8311	131.4253	166.1748	165.5518
All ages	55.8315	50.8727	87.2673	76.1541

TABLE 131.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	12	1.639	5	0.686
5 - 9	2	0.243	3	0.368
10 - 14	13	1.359	6	0.640
15 - 19	15	1.735	10	1.294
20 - 24	19	2.360	12	1.611
25 - 29	35	4.519	15	2.026
30 - 34	51	5.673	49	5.817
35 - 39	55	5.694	91	9.837
40 - 44	75	9.741	105	13.853
45 - 49	133	13.895	186	20.216
50 - 54	156	14.324	219	22.449
55 - 59	193	16.510	231	22.330
60 - 64	163	15.558	243	23.354
65 - 69	113	11.652	219	21.076
70 - 74	97	10.669	233	21.720
75 - 79	58	6.187	177	15.068
80 - 84	26	2.372	97	7.163
85 +	15	1.082	33	2.321
All ages	1231	125.212	1934	191.829
Age Groups				
35 - 49	263	29.330	382	43.906
50 - 64	512	46.392	693	68.133
Rates per million				
35 - 49	55.8149	55.7646	78.6008	78.3019
50 - 64	130.0813	130.0822	155.5206	155.0154
All ages	56.2486	51.3434	82.2944	72.0149

TABLE 132.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	9	1.196	8	1.068
5 - 9	7	0.858	2	0.248
10 - 14	13	1.352	8	0.848
15 - 19	13	1.450	9	1.124
20 - 24	19	2.322	21	2.778
25 - 29	14	1.812	26	3.542
30 - 34	37	4.182	46	5.526
35 - 49	85	9.154	98	11.047
40 - 44	80	9.988	122	15.494
45 - 49	138	14.453	164	17.825
50 - 54	171	15.$91	232	23.694
55 - 59	209	17.454	281	26.771
60 - 64	199	18.352	263	24.845
65 - 69	121	12.354	267	25.338
70 - 74	93	10.161	222	20.384
75 - 79	59	6.246	193	16.138
80 - 84	28	2.504	114	8.120
85 +	15	1.035	61	4.079
All ages	1310	130.464	2137	208.869
Age Groups				
35 - 49	303	33.595	384	44.366
50 - 64	579	51.397	776	75.310
Rates per million				
35 - 49	64.4955	63.8736	79.2733	79.1223
50 - 64	144.1733	144.1161	172.1766	171.3445
All ages	59.3566	53.4970	90.2259	78.4119

TABLE 133.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1961 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	6	0.771	2	0.259
5 - 9	4	0.489	3	0.372
10 - 14	18	1.875	3	0.319
15 - 19	24	2.533	11	1.315
20 - 24	20	2.326	12	1.601
25 - 29	37	4.696	16	2.202
30 - 34	51	5.707	47	5.719
35 - 39	75	8.258	94	10.982
40 - 44	74	8.777	111	13.598
45 - 49	126	13.337	181	19.960
50 - 54	179	16.247	239	24.364
55 - 59	192	15.717	247	23.197
60 - 64	195	17.379	267	24.890
65 - 69	144	14.401	236	22.070
70 - 74	87	9.490	263	23.994
75 - 79	61	6.425	178	14.582
80 - 84	24	2.157	121	8.468
85 +	11	0.776	74	4.900
All ages	1328	131.361	2105	202.792
Age Groups				
35 - 49	275	30.372	386	44.540
50 - 64	566	49.343	753	72.451
Rates per million				
35 - 49	58.3988	57.7457	80.1495	79.4326
50 - 64	138.4879	138.3568	165.4945	164.8397
All ages	59.4290	53.8648	88.3711	76.1305

TABLE 134.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	10	1.246	1	0.125
5 - 9	5	0.600	4	0.488
10 - 14	14	1.544	9	1.014
15 - 19	22	2.134	13	1.430
20 - 24	22	2.606	16	2.103
25 - 29	33	4.148	27	3.686
30 - 34	49	5.458	47	5.742
35 - 39	69	7.757	72	8.641
40 - 44	87	9.897	125	14.836
45 - 49	134	14.492	189	21.310
50 - 54	183	16.632	228	23.300
55 - 59	191	15.428	292	27.160
60 - 64	198	17.232	325	29.880
65 - 69	146	14.241	277	25.488
70 - 74	98	10.601	277	24.952
75 - 79	70	7.354	223	18.033
80 - 84	35	3.130	118	8.136
85 +	21	1.481	56	3.586
All ages	1387	135.881	2299	219.915
Age Groups				
35 - 49	290	32.146	386	44.787
50 - 64	572	49.192	845	80.340
Rates per million				
35 - 49	61.4537	61.1186	80.6351	79.8731
50 - 64	138.2310	137.9334	184.4978	182.7887
All ages	61.2335	55.7183	95.7199	82.5587

TABLE 135.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	8	0.967	3	0.364
5 - 9	2	0.236	3	0.360
10 - 14	7	0.790	8	0.925
15 - 19	17	1.580	15	1.578
20 - 24	17	1.974	16	2.045
25 - 29	37	4.584	24	3.212
30 - 34	43	4.754	45	5.553
35 - 39	86	9.746	73	9.003
40 - 44	107	11.612	126	14.388
45 - 49	132	15.200	184	21.867
50 - 54	190	17.469	234	23.861
55 - 59	214	17.178	273	25.351
60 - 64	200	16.458	325	29.608
65 - 69	145	14.407	266	24.386
70 - 74	96	10.361	308	27.436
75 - 79	65	7.021	257	20.747
80 - 84	26	2.319	120	8.194
85 +	15	1.032	54	3.193
All ages	1407	137.688	2334	222.071
Age Groups				
35 - 49	325	36.558	383	45.258
50 - 64	604	51.105	832	78.820
Rates per million				
35 - 49	69.3259	69.5071	81.0496	80.7131
50 - 64	144.2457	143.2974	180.9128	179.3304
All ages	61.6186	56.4592	96.4714	83.3681

TABLE 136.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1964 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	0.588	5	0.590
5 - 9	2	0.231	1	0.117
10 - 14	11	1.268	6	0.707
15 - 19	21	1.918	10	1.040
20 - 24	20	2.253	18	2.246
25 - 29	25	3.057	24	3.162
30 - 34	48	5.326	42	5.270
35 - 39	57	6.524	57	7.162
40 - 44	117	12.374	145	16.182
45 - 49	135	16.106	178	22.075
50 - 54	188	17.274	275	27.978
55 - 59	225	17.902	298	27.508
60 - 64	207	16.494	321	28.758
65 - 69	151	14.701	325	29.367
70 - 74	99	10.575	283	24.863
75 - 79	88	9.435	200	15.851
80 - 84	32	2.821	132	8.799
85 +	19	1.265	62	3.489
All ages	1450	140.112	2382	225.144
Age Groups				
35 - 49	309	35.004	380	45.419
50 - 64	620	51.670	894	84.244
Rates per million				
35 - 49	66.2365	66.5525	81.3304	81.0002
50 - 64	146.2230	144.8816	192.8595	191.6710
All ages	62.9239	57.4532	97.7929	84.5217

TABLE 137.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1965 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	4	0.459	3	0.345
5 - 9	2	0.226	1	0.115
10 - 14	10	1.170	6	0.716
15 - 19	19	1.726	12	1.242
20 - 24	20	2.184	17	2.061
25 - 29	25	3.042	19	2.475
30 - 34	48	5.345	46	5.807
35 - 39	63	7.275	72	9.167
40 - 44	99	10.710	128	14.673
45 - 49	130	15.200	176	21.565
50 - 54	196	18.045	231	23.545
55 - 59	213	16.847	299	27.461
60 - 64	233	18.227	302	26.667
65 - 69	158	14.806	320	28.449
70 - 74	130	13.765	270	23.349
75 - 79	74	7.888	263	20.517
80 - 84	37	3.230	127	8.254
85 +	16	1.042	73	3.926
All ages	1477	141.187	2365	220.334
Age Groups				
35 - 49	292	33.185	376	45.405
50 - 64	642	53.119	832	77.673
Rates per million				
35 - 49	62.9053	63.0940	81.2955	80.9752
50 - 64	150.4041	148.9446	178.4948	176.7207
All ages	63.5898	57.8940	96.3898	82.7160

TABLE 138.

Mortality from Subarachnoid Haemorrhage (330) England & Wales 1966 standardised on 1951. Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	5	0.566	6	0.681
5 - 9	6	0.657	1	0.111
10 - 14	10	1.173	5	0.599
15 - 19	12	1.096	11	1.136
20 - 24	28	2.934	19	2.224
25 - 29	30	3.662	26	3.401
30 - 34	34	3.800	43	5.463
35 - 39	69	7.992	66	8.487
40 - 44	106	11.864	132	15.726
45 - 49	146	16.335	192	22.639
50 - 54	152	14.230	262	27.184
55 - 59	219	17.271	277	25.322
60 - 64	234	18.106	335	29.191
65 - 69	167	15.018	343	30.142
70 - 74	130	13.690	264	22.521
75 - 79	69	7.336	201	15.536
80 - 84	36	3.141	121	7.703
85 +	16	1.040	53	2.769
All ages	1469	139.911	2357	220.835
Age Groups				
35 - 49	321	36.191	390	46.852
50 - 64	605	49.607	874	81.697
Rates per million				
35 - 49	69.0828	68.8093	84.6795	83.5558
50 - 64	141.9888	139.0970	187.5979	185.8761
All ages	62.7982	57.3708	95.4912	82.9041

TABLE 139.

Mortality from Cerebral Vascular Disease (330-334) (83) England & Wales 1947 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	38	5.090	27	3.627
5 - 9	1	0.141	1	0.141
10 - 14	11	1.537	4	0.563
15 - 19	14	1.647	10	1.310
20 - 24	11	1.220	15	1.846
25 - 29	29	3.291	31	3.600
30 - 34	42	4.320	51	5.525
35 - 39	87	8.954	114	12.394
40 - 44	203	22.497	263	29.981
45 - 49	436	51.687	574	66.501
50 - 54	842	101.214	1068	126.289
55 - 59	1442	155.227	1758	198.612
60 - 64	2563	269.546	2976	326.774
65 - 69	3937	418.968	4715	516.184
70 - 74	5182	585.701	6458	728.895
75 - 79	4933	606.685	6824	793.693
80 - 84	3269	394.343	5131	571.393
85 +	1678	191.027	3486	378.580
All ages	24,718	2823.095	33,506	3765.908
Age Groups.				
35 - 49	726	83.138	951	108.876
50 - 64	4847	525.987	5802	651.675
Rates per million				
35 - 49	152.2332	158.0688	191.1942	194.1694
50 - 64	1516.5832	1474.8567	1504.2779	1482.6835
All ages	1187.1098	1157.6153	1507.3781	1413.7660

TABLE 140.

(330-334)
Mortality from Cerebral Vascular Disease (33) England & Wales 1948
standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	22	2.843	27	3.496
5 - 9	2	0.277	2	0.278
10 - 14	6	0.829	2	0.278
15 - 19	9	1.068	11	1.459
20 - 24	9	0.994	12	1.500
25 - 29	29	3.122	25	2.798
30 - 34	59	6.348	65	7.427
35 - 39	99	10.189	101	11.031
40 - 44	198	21.559	210	23.712
45 - 49	390	43.849	540	61.810
50 - 54	684	80.393	1107	129.435
55 - 59	1357	146.267	1607	179.322
60 - 64	2430	253.925	2812	306.123
65 - 69	3617	383.438	4260	460.361
70 - 74	4708	523.996	6006	658.786
75 - 79	4592	540.887	6448	720.313
80 - 84	2855	324.782	4887	517.524
85 +	1468	153.642	3227	324.494
All ages	22,524	2497.409	31,349	3410.147
Age Groups				
35 - 49	677	75.597	851	96.553
50 - 64	4471	479.585	5526	614.880
Rates per million				
35 - 49	139.9628	143.7312	170.1660	172.1925
50 - 64	1382.0711	1344.7465	1417.2865	1398.9680
All ages	1067.9437	1024.0668	1398.8220	1280.2092

TABLE 141.

(330-334)

Mortality from Cerebral Vascular Disease (83) England & Wales 1949 standardised on 1951 Scottish Population.

Age in years.	Males.		Females	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	20	2.549	13	1.662
5 - 9	1	0.134	4	0.540
10 - 14	-	-	6	0.824
15 - 19	7	0.844	10	1.341
20 - 24	17	1.896	18	2.275
25 - 29	25	2.601	24	2.608
30 - 34	37	4.202	44	5.329
35 - 39	79	8.145	112	12.275
40 - 44	213	22.888	225	25.197
45 - 49	466	52.552	544	61.683
50 - 54	803	91.515	1099	126.204
55 - 59	1386	148.234	1716	190.171
60 - 64	2504	260.273	2804	302.403
65 - 69	3791	401.884	4466	477.420
70 - 74	5228	577.945	6628	713.312
75 - 79	5089	584.604	7374	801.583
80 - 84	3419	377.013	5484	565.801
85 +	1723	172.009	3857	373.990
All ages	24,808	2709.288	34,428	3664.618
Age Groups.				
35 - 49	758	83.585	881	99.155
50 - 64	4693	500.022	5619	618.778
Rates per million				
35 - 49	155.0102	158.9186	175.3583	176.8329
50 - 64	1431.2290	1402.0514	1424.3346	1407.8367
All ages	1168.0399	1110.9485	1527.0114	1375.7406

TABLE 142.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1950 standardised on 1951 Scottish Population

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	50	3.806	15	1.902
5 - 9	5	0.650	3	0.393
10 - 14	9	1.220	1	0.137
15 - 19	7	0.900	8	1.085
20 - 24	23	2.689	24	3.051
25 - 29	31	3.433	30	3.438
30 - 34	54	5.979	53	6.194
35 - 39	97	10.113	136	14.966
40 - 44	208	22.245	247	27.499
45 - 49	436	48.171	600	67.567
50 - 54	850	93.800	1142	128.839
55 - 59	1383	147.234	1758	192.911
60 - 64	2581	266.581	2950	315.473
65 - 69	3983	421.700	4828	511.604
70 - 74	5711	628.164	6985	736.918
75 - 79	5693	638.214	7774	822.909
80 - 84	3948	419.890	6440	650.092
85 +	2126	202.876	4534	424.478
All ages	27,175	2917.665	37,528	3909.456
Age Groups				
35 - 49	741	80.529	983	110.032
50 - 64	4814	507.615	5850	637.223
Rates per million				
35 - 49	150.9165	153.1083	195.1171	196.2310
50 - 64	1445.2116	1423.3420	1464.6870	1449.8025
All ages	1283.7168	1196.3939	1656.0611	1467.6557

TABLE 143.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	14	1.778	14	1.776
5 - 9	4	0.500	5	0.633
10 - 14	11	1.495	10	1.370
15 - 19	14	1.820	6	0.817
20 - 24	23	2.869	18	2.324
25 - 29	48	5.548	30	3.541
30 - 34	61	6.683	69	7.879
35 - 39	97	10.523	107	12.012
40 - 44	249	26.709	266	29.597
45 - 49	498	53.653	648	71.986
50 - 54	924	99.428	1130	126.630
55 - 59	1476	156.130	1904	206.437
60 - 64	2698	278.666	3058	322.145
65 - 69	4172	444.547	4982	521.336
70 - 74	5792	646.839	7174	729.890
75 - 79	6304	706.710	8423	859.416
80 - 84	4267	451.146	6830	696.981
85 +	2351	258.570	4769	490.449
All ages	29,003	3153.614	39,443	4085.219
Age Groups				
35 - 49	844	90.885	1021	113.595
50 - 64	5098	534.224	6092	655.212
Rates per million				
35 - 49	173.0217	172.7980	203.1032	202.5852
50 - 64	1512.3109	1497.9531	1508.6677	1490.7309
All ages	1377.8802	1293.1452	1733.6820	1533.6391

TABLE 144.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1952 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	20	2.695	8	1.078
5 - 9	9	1.038	4	0.466
10 - 14	12	1.624	13	1.782
15 - 19	20	2.601	16	2.180
20 - 24	35	4.446	25	3.263
25 - 29	45	5.366	36	4.387
30 - 34	71	7.495	67	7.411
35 - 39	139	15.567	147	17.027
40 - 44	275	29.692	292	32.642
45 - 49	501	53.062	682	75.073
50 - 54	977	102.053	1354	149.724
55 - 59	1531	159.186	1923	206.494
60 - 64	2723	279.777	3055	318.924
65 - 69	4244	449.906	4834	501.996
70 - 74	5660	629.952	7368	738.229
75 - 79	6248	691.166	8546	840.123
80 - 84	4275	434.118	6898	674.486
85 +	2373	244.419	4962	488.112
All ages	29,158	3114.163	40,230	4063.397
Age Groups				
35 - 49	915	98.321	1121	124.742
50 - 64	5231	541.016	6332	675.142
Rates per million				
35 - 49	188.9325	186.9359	225.0100	222.4648
50 - 64	1522.8530	1516.9977	1551.2004	1536.0754
All ages	1380.6525	1276.9683	1762.8500	1525.4469

TABLE 145.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1953 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	17	2.373	15	2.093
5 - 9	4	0.444	6	0.672
10 - 14	7	0.931	9	1.218
15 - 19	12	1.546	19	2.559
20 - 24	37	4.676	31	4.101
25 - 29	43	5.208	48	5.989
30 - 34	79	8.007	87	9.280
35 - 39	130	15.369	121	14.803
40 - 44	250	27.221	265	29.729
45 - 49	525	54.747	638	69.594
50 - 54	1005	102.210	1260	137.600
55 - 59	1548	157.559	1781	189.010
60 - 64	2648	271.502	2794	289.537
65 - 69	4002	423.712	4773	491.447
70 - 74	5518	615.191	6923	688.015
75 - 79	6167	678.611	8562	820.300
80 - 84	4405	437.434	6881	645.823
85 +	2365	232.522	5094	493.935
All ages	28,762	3039.263	39,307	3895.705
Age Groups				
35 - 49	905	97.337	1024	114.126
50 - 64	5201	531.271	5835	616.147
Rates per million				
35 - 49	189.6877	185.0651	208.8091	203.5322
50 - 64	1486.8496	1489.6729	1414.2026	1401.8506
All ages	1355.8667	1246.2554	1718.1886	1462.4934

TABLE 146.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	12	1.705	8	1.136
5 - 9	9	0.977	2	0.220
10 - 14	15	1.943	13	1.711
15 - 19	15	1.929	14	1.887
20 - 24	40	5.073	21	2.835
25 - 29	46	5.622	42	5.323
30 - 34	95	9.222	94	9.627
35 - 39	113	14.216	135	17.620
40 - 44	257	28.307	293	33.025
45 - 49	557	58.227	619	67.197
50 - 54	1089	107.384	1185	127.328
55 - 59	1631	164.848	1832	191.074
60 - 64	2830	289.254	3013	308.959
65 - 69	4221	446.898	4909	497.463
70 - 74	5708	627.834	7490	735.825
75 - 79	6520	706.305	9009	841.720
80 - 84	4792	465.576	7368	650.211
85 +	2566	225.010	5579	470.405
All ages	30,516	3160.330	41,626	3963.566
Age Groups				
35 - 49	927	100.750	1047	117.842
50 - 64	5550	561.486	6030	627.361
Rates per million				
35 - 49	199.0125	191.5541	217.8074	210.1593
50 - 64	1562.0602	1574.3952	1439.8281	1427.3646
All ages	1433.4837	1295.8992	1810.9284	1487.9692

TABLE 147

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1955 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	16	2.301	6	0.864
5 - 9	7	0.757	3	0.328
10 - 14	11	1.378	6	0.765
15 - 19	17	2.140	11	1.482
20 - 24	26	3.317	34	4.642
25 - 29	37	4.601	46	5.920
30 - 34	83	8.402	67	7.177
35 - 39	121	14.628	123	15.499
40 - 44	208	23.008	309	34.192
45 - 49	559	58.113	595	64.553
50 - 54	1027	99.213	1153	122.317
55 - 59	1620	158.614	1811	185.816
60 - 64	2633	267.450	2919	296.214
65 - 69	4169	440.830	4843	488.053
70 - 74	5691	625.964	7679	747.535
75 - 79	6711	728.882	9295	851.552
80 - 84	5256	499.851	8047	686.393
85 +	2906	241.756	6107	496.420
All ages	31,098	3181.205	43,054	4009.722
Age Groups				
35 - 49	888	95.749	1027	114.244
50 - 64	5280	525.277	5883	604.347
Rates per million				
35 - 49	188.2552	182.0458	211.4909	203.7426
50 - 64	1456.1500	1472.8659	1386.1923	1375.0034
All ages	1453.9249	1304.4590	1867.6904	1505.2967

TABLE 148.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1956 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	19	2.725	13	1.868
5 - 9	7	0.759	5	0.547
10 - 14	19	2.274	19	2.321
15 - 19	18	2.281	13	1.765
20 - 24	36	4.579	25	3.453
25 - 29	48	6.001	39	5.080
30 - 34	72	7.516	77	8.543
35 - 39	124	14.437	133	16.136
40 - 44	261	29.393	284	32.669
45 - 49	527	54.752	602	65.235
50 - 54	954	90.567	1109	116.320
55 - 59	1723	162.915	1764	178.473
60 - 64	2713	273.031	2875	288.526
65 - 69	4164	437.516	4688	467.680
70 - 74	5593	615.185	7425	715.488
75 - 79	6689	724.613	9542	854.791
80 - 84	5119	476.732	8348	685.003
85 +	2948	239.121	6492	509.414
All ages	31,034	3144.397	43,453	3953.312
Age Groups				
35 - 49	912	98.582	1019	114.040
50 - 64	5390	526.513	5748	583.319
Rates per million				
35 - 49	192.2023	187.4321	208.5551	203.3788
50 - 64	1455.5766	1476.3316	1337.9888	1327.1607
All ages	1442.3014	1289.3658	1877.0194	1484.1197

TABLE 149.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	21	2.976	14	1.991
5 - 9	6	0.692	8	0.931
10 - 14	16	1.760	8	0.898
15 - 19	17	2.108	13	1.765
20 - 24	23	2.937	23	3.183
25 - 29	51	6.420	30	3.945
30 - 34	72	7.722	72	8.232
35 - 39	125	14.053	126	14.776
40 - 44	241	27.997	273	32.241
45 - 49	500	52.043	625	67.889
50 - 54	1000	93.626	1184	123.104
55 - 59	1757	160.117	1781	177.596
60 - 64	2679	265.524	2806	277.657
65 - 69	4123	429.402	4659	458.912
70 - 74	5501	602.035	7364	699.381
75 - 79	6314	675.244	9288	812.719
80 - 84	5114	466.596	8456	664.709
85 +	2977	224.624	6402	472.320
All ages	30,537	3035.876	43,132	3822.249
Age Groups				
35 - 49	866	94.093	1024	114.906
50 - 64	5436	519.267	5771	578.357
Rates per million				
35 - 49	182.4310	178.8973	209.2786	204.9233
50 - 64	1436.1955	1456.0140	1326.9717	1315.8713
All ages	1410.6153	1244.8666	1854.4219	1434.9171

TABLE 150.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1958 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	18	2.510	8	1.119
5 - 9	5	0.597	3	0.362
10 - 14	6	0.636	14	1.512
15 - 19	21	2.545	10	1.335
20 - 24	28	3.526	22	3.010
25 - 29	42	5.360	35	4.653
30 - 34	72	7.878	59	6.886
35 - 39	140	15.104	157	17.688
40 - 44	231	28.291	238	29.595
45 - 49	514	53.666	526	57.273
50 - 54	1002	92.658	1050	108.163
55 - 59	1792	157.963	1746	171.515
60 - 64	2523	246.575	2799	272.928
65 - 69	4115	426.964	4751	463.365
70 - 74	5632	619.475	7393	695.962
75 - 79	6435	686.428	9835	848.751
80 - 84	5427	497.678	9107	694.482
85 +	3295	242.970	7126	514.547
All ages	31,298	3090.824	44,879	3893.146
Age Groups				
35 - 49	885	97.061	921	104.556
50 - 64	5317	497.196	5595	552.606
Rates per million				
35 - 49	187.1827	184.5403	188.9618	186.4651
50 - 64	1377.1044	1394.1273	1270.1476	1257.2829
All ages	1439.3856	1267.3981	1920.7789	1461.5327

TABLE 151.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	22	3.005	14	1.920
5 - 9	4	0.486	6	0.737
10 - 14	13	1.359	11	1.174
15 - 19	17	1.967	12	1.553
20 - 24	22	2.733	19	2.551
25 - 29	45	5.811	23	3.107
30 - 34	76	8.454	72	8.547
35 - 39	128	13.251	149	16.106
40 - 44	200	25.975	244	32.191
45 - 49	477	49.833	512	55.648
50 - 54	967	88.789	1012	103.736
55 - 59	1824	156.034	1639	158.434
60 - 64	2723	259.910	2749	264.204
65 - 69	3878	399.872	4439	427.205
70 - 74	5464	600.996	7186	669.857
75 - 79	6292	671.174	9625	819.376
80 - 84	5356	488.676	9184	678.238
85 +	3389	244.347	7357	517.469
All ages	30,897	3022.672	44,253	3762.053
Age Groups				
35 - 49	805	89.059	905	103.945
50 - 64	5514	504.733	5400	526.374
Rates per million				
35 - 49	170.8404	169.3262	186.2140	185.3754
50 - 64	1400.9146	1415.2609	1211.8492	1197.6001
All ages	1411.7889	1239.4522	1883.0263	1412.3188

TABLE 152.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	27	3.589	20	2.671
5 - 9	9	1.104	3	0.372
10 - 14	14	1.456	12	1.272
15 - 19	18	2.007	10	1.249
20 - 24	22	2.688	27	3.572
25 - 29	24	3.105	36	4.905
30 - 34	64	7.234	64	7.689
35 - 39	150	16.153	159	17.924
40 - 44	235	29.339	244	30.988
45 - 49	503	52.680	489	53.148
50 - 54	1049	95.640	992	101.313
55 - 59	1774	148.147	1633	155.576
60 - 64	2829	260.890	2822	266.586
65 - 69	3969	405.227	4495	426.571
70 - 74	5515	602.558	7138	655.397
75 - 79	6195	655.809	9759	816.028
80 - 84	5179	463.122	9329	664.467
85 +	3429	236.711	7984	533.906
All ages	31,005	2987.459	45,216	3743.634
Age Groups				
35 - 49	888	98.172	892	102.060
50 - 64	5652	504.677	5447	523.475
Rates per million				
35 - 49	189.0166	186.6526	184.1453	182.0137
50 - 64	1407.3705	1415.1039	1208.5645	1191.0044
All ages	1404.8482	1225.0131	1909.0564	1405.4041

TABLE 153.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1961 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	19	2.442	8	1.034
5 - 9	6	0.734	5	0.621
10 - 14	21	2.188	3	0.319
15 - 19	27	2.849	16	1.913
20 - 24	27	3.140	17	2.268
25 - 29	47	5.965	26	3.578
30 - 34	83	9.288	67	8.153
35 - 39	133	14.644	141	16.473
40 - 44	218	25.857	218	26.707
45 - 49	456	48.266	508	56.021
50 - 54	926	84.050	985	100.414
55 - 59	1814	148.489	1574	147.822
60 - 64	2839	253.015	2622	244.423
65 - 69	4016	401.628	4570	427.364
70 - 74	5381	586.943	7183	655.312
75 - 79	6189	651.869	9662	791.530
80 - 84	5237	470.649	9747	682.124
85 +	3721	262.453	8511	563.598
All ages	31,160	2974.469	45,863	3729.674
Age Groups				
35 - 49	807	88.767	867	99.201
50 - 64	5579	485.554	5181	492.659
Rates per million				
35 - 49	171.3740	168.7711	180.0249	176.9150
50 - 64	1365.0599	1361.4834	1138.6813	1120.8921
All ages	1394.4330	1219.6865	1925.3988	1400.1634

TABLE 134.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	22	2.741	6	0.751
5 - 9	6	0.720	7	0.854
10 - 14	17	1.875	16	1.803
15 - 19	26	2.522	18	1.980
20 - 24	28	3.317	26	3.426
25 - 29	45	5.657	40	5.461
30 - 34	69	7.685	68	8.308
35 - 39	125	14.053	116	13.922
40 - 44	233	26.505	259	30.740
45 - 49	451	48.776	493	55.586
50 - 54	936	85.066	929	94.937
55 - 59	1775	143.372	1594	148.263
60 - 64	2801	24[illegible].362	2735	251.453
65 - 69	4119	401.763	4313	396.865
70 - 74	5504	595.406	7370	663.890
75 - 79	6268	658.535	9732	786.998
80 - 84	5381	481.185	9834	678.064
85 +	3867	272.751	9068	580.651
All ages	31,673	2994.291	46,624	3723.952
Age Groups				
35 - 49	809	89.334	868	100.248
50 - 64	5512	470.800	5258	494.653
Rates per million				
35 - 49	171.4346	169.8491	181.3244	178.7822
50 - 64	1332.0445	1320.1135	1148.0349	1125.4289
All ages	1398.3047	1227.8146	1941.2108	1398.0153

TABLE 155.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1963 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	22	2.659	11	1.336
5 - 9	6	0.709	4	0.479
10 - 14	10	1.129	9	1.041
15 - 19	22	2.045	19	1.999
20 - 24	31	3.599	21	2.685
25 - 29	45	5.575	33	4.416
30 - 34	67	7.408	64	7.898
35 - 39	123	13.939	110	13.566
40 - 44	264	28.650	262	29.918
45 - 49	433	49.862	474	56.333
50 - 54	854	78.519	940	95.850
55 - 59	1799	144.404	1567	145.510
60 - 64	2960	243.578	2679	244.065
65 - 69	4083	405.691	4491	411.717
70 - 74	5583	602.556	7369	656.416
75 - 79	6288	679.236	9970	804.858
80 - 84	5530	493.282	10412	710.931
85 +	4144	285.157	9641	570.024
All ages	32,264	3047.998	48,076	3759.042
Age Groups				
35 - 49	820	92.451	846	99.817
50 - 64	5613	466.501	5186	485.425
Rates per million				
35 - 49	174.9147	175.7754	179.0287	178.0135
50 - 64	1340.4819	1308.0592	1127.6610	1104.4334
All ages	1412.9806	1249.8372	1987.1289	1411.1885

TABLE 156.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1964 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	22	2.587	17	2.007
5 - 9	2	0.231	4	0.470
10 - 14	12	1.383	12	1.413
15 - 19	29	2.649	14	1.456
20 - 24	31	3.491	28	3.494
25 - 29	40	4.891	30	3.952
30 - 34	73	8.099	62	7.780
35 - 39	119	13.620	95	11.937
40 - 44	255	26.968	262	29.239
45 - 49	422	50.345	461	57.172
50 - 54	908	83.431	927	94.311
55 - 59	1776	141.304	1398	129.049
60 - 64	2939	234.188	2546	228.091
65 - 69	3855	375.307	4171	376.896
70 - 74	5115	546.379	6757	593.629
75 - 79	5775	619.184	9032	714.946
80 - 84	4825	425.329	9503	633.451
85 +	3620	240.925	8828	496.849
All ages	29,818	2780.311	44,147	3386.142
Age Groups				
35 - 49	796	90.933	818	98.348
50 - 64	5623	458.923	4871	451.451
Rates per million				
35 - 49	170.6287	172.8892	175.0744	175.3937
50 - 64	1326.1480	1286.8106	1050.8036	1027.1362
All ages	1293.9762	1140.0717	1812.4528	1271.1974

TABLE 157.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1965 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	23	2.637	14	1.611
5 - 9	7	0.790	6	0.687
10 - 14	12	1.404	13	1.552
15 - 19	24	2.181	17	1.759
20 - 24	28	3.057	21	2.546
25 - 29	43	5.232	32	4.169
30 - 34	68	7.572	67	8.458
35 - 39	116	13.396	132	16.807
40 - 44	272	29.426	248	28.428
45 - 49	442	51.680	424	51.953
50 - 54	936	86.175	784	79.909
55 - 59	1638	129.559	1435	131.795
60 - 64	3093	241.959	2597	229.315
65 - 69	4228	396.193	4142	368.236
70 - 74	5430	574.972	6887	595.581
75 - 79	5900	628.875	9416	734.542
80 - 84	5228	456.378	10019	651.145
85 +	4128	268.943	10277	552.738
All ages	31,616	2900.429	46,531	3461.231
Age Groups				
35 - 49	830	94.502	804	97.188
50 - 64	5667	457.693	4816	441.019
Rates per million				
35 - 49	178.8061	179.6749	173.8341	173.3250
50 - 64	1327.6327	1283.3617	1033.2103	1003.4014
All ages	1361.1745	1189.3263	1896.4533	1299.3867

TABLE 158.

Mortality from Cerebral Vascular Disease (330-334) England & Wales 1966 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	23	2.603	21	2.385
5 - 9	11	1.204	3	0.334
10 - 14	14	1.642	8	0.959
15 - 19	17	1.552	16	1.653
20 - 24	34	3.563	28	3.277
25 - 29	42	5.127	38	4.970
30 - 34	66	7.377	60	7.623
35 - 39	131	15.174	110	14.145
40 - 44	254	28.429	231	27.520
45 - 49	446	49.900	447	52.705
50 - 54	869	81.356	831	86.220
55 - 59	1657	130.678	1363	124.600
60 - 64	2926	226.405	2479	216.015
65 - 69	4244	381.667	4151	364.782
70 - 74	5406	569.300	6910	589.478
75 - 79	5999	637.802	9492	733.684
80 - 84	5220	455.455	10194	648.991
85 +	4384	285.048	10699	559.044
All ages	31,743	2884.282	47,081	3438.385
Age Groups				
35 - 49	831	93.503	788	94.370
50 - 64	5452	438.439	4673	426.835
Rates per million				
35 - 49	178.8404	177.7755	171.0961	168.2994
50 - 64	1279.5419	1229.3739	1003.0265	971.1301
All ages	1356.9792	1182.7052	1907.4339	1290.8101

TABLE 159.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1950 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	1	1.0147	1	1.0130
5 - 9	2	2.0326	1	1.0143
10 - 14	3	2.9784	-	-
15 - 19	4	3.5340	4	3.9552
20 - 24	8	6.9904	2	1.9920
25 - 29	10	9.3150	13	12.6516
30 - 34	12	11.9424	11	11.3102
35 - 39	54	50.8572	26	25.2174
40 - 44	134	132.4054	48	48.0432
45 - 49	305	303.2920	85	84.6345
50 - 54	451	469.8067	177	181.6728
55 - 59	661	658.3560	336	337.2096
60 - 64	906	901.6512	606	609.5148
65 - 69	1184	1176.4224	1041	1049.8485
70 - 74	1630	1604.7350	1548	1541.6532
75 - 79	1630	1655.4280	1780	1817.2020
80 - 84	1207	1220.2770	1648	1643.2208
85 +	713	722.9107	1420	1410.4860
All ages	8915	8933.9491	8747	8780.6391
Age Groups				
35 - 49	493	486.5546	159	157.8951
50 - 64	2018	2029.8139	1119	1128.3972
Rates per million				
35 - 49	912.970	925.077	280.319	281.590
50 - 64	5735.366	5691.556	2578.406	2567.316
All ages	3558.044	3663.382	3285.540	3296.355

TABLE 160.

.Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1951 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	1	1	-	-
5 - 9	-	-	1	1
10 - 14	-	-	3	3
15 - 19	5	5	5	5
20 - 24	7	7	3	3
25 - 29	10	10	9	9
30 - 34	30	30	15	15
35 - 39	52	52	27	27
40 - 44	154	154	35	35
45 - 49	295	295	97	97
50 - 54	539	539	168	168
55 - 59	691	691	331	331
60 - 64	970	970	588	588
65 - 69	1281	1281	1032	1032
70 - 74	1644	1644	1529	1529
75 - 79	1720	1720	1890	1890
80 - 84	1286	1286	1719	1719
85 +	793	793	1517	1517
All ages	9478	9478	8969	8969
Age Groups				
35 - 49	501	501	159	159
50 - 64	2200	2200	1087	1087
Rates per million				
35 - 49	952.542	952.542	283.560	283.560
50 - 64	6168.755	6168.755	2473.130	2473.130
All ages	3886.471	3886.471	3667.068	3667.068

TABLE 161.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1952 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised.
0 - 4	1	1.0523	-	-
5 - 9	-	-	-	-
10 - 14	3	3.0240	3	3.0297
15 - 19	5	5.0925	1	1.0154
20 - 24	2	2.0393	1	1.0088
25 - 29	9	9.1980	4	4.0912
30 - 34	30	28.8120	7	6.7868
35 - 39	49	50.9355	26	26.8762
40 - 44	127	126.6699	41	40.9220
45 - 49	263	262.2110	92	91.9080
50 - 54	483	466.0950	165	163.1190
55 - 59	601	596.1920	348	342.3624
60 - 64	1007	1000.5552	560	555.2400
65 - 69	1227	1234.9755	932	925.9420
70 - 74	1573	1582.5950	1375	1361.6630
75 - 79	1720	1687.3200	1671	1615.6889
80 - 84	1225	1194.1300	1536	1509.8880
85 +	767	734.4027	1353	1305.1038
All ages	9092	8985.2998	8115	7954.6448
Age Groups				
35 - 49	439	439.8163	159	159.6063
50 - 64	2091	2062.8422	1073	1060.7214
Rates per million				
35 - 49	843.840	836.215	286.442	284.820
50 - 64	5754.338	5784.167	2411.545	2413.341
All ages	3731.141	3684.439	3046.104	2986.267

TABLE 162.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1953 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	0.9142
10 - 14	-	-	-	-
15 - 19	1	1.0240	1	1.0225
20 - 24	6	6.3084	-	-
25 - 29	5	5.1505	6	6.2154
30 - 34	36	33.2172	14	13.0648
35 - 39	53	58.2046	17	18.4807
40 - 44	159	159.7791	41	41.1476
45 - 49	283	279.7738	75	74.4525
50 - 54	476	442.7276	167	162.6580
55 - 59	718	706.2248	257	250.2666
60 - 64	883	870.0199	496	484.8896
65 - 69	1194	1204.2684	887	862.5295
70 - 74	1455	1486.4280	1253	1233.9544
75 - 79	1474	1432.2858	1684	1589.6960
80 - 84	1224	1153.3752	1476	1407.8088
85 +	697	642.4249	1333	1247.1548
All ages	8664	8481.2122	7698	7394.2554
Age Groups				
35 - 49	495	497.7575	133	134.0808
50 - 64	2077	2018,9723	920	897.8142
Rates per million				
35 - 49	968.183	946.377	243.501	239.120
50 - 64	560.2097	5661.157	2040.839	2042.697
All ages	3556.844	3477.737	2889.701	2775.890

TABLE 163.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1954 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	2	2.0734	2	2.0480
20 - 24	3	3.2220	3	3.1470
25 - 29	12	12.5088	2	2.0960
30 - 34	37	32.9707	9	8.2431
35 - 39	60	69.4920	24	27.4344
40 - 44	146	148.8032	43	43.4386
45 - 49	280	273.0000	90	88.4340
50 - 54	565	513.4155	171	165.0321
55 - 59	754	723.7646	296	283.3312
60 - 64	1040	1020.5520	531	514.1142
65 - 69	1194	1209.1638	874	849.0910
70 - 74	1464	1511.4336	1269	1240.9551
75 - 79	1659	1605.4143	1640	1522.5760
80 - 84	1211	1090.3844	1647	1509.1461
85 +	768	692.8896	1458	1327.9464
All ages	9195	8909.0879	8059	7587.0332
Age Groups				
35 - 49	486	491.2952	157	159.3070
50 - 64	2359	2257.7321	998	962.4775
Rates per million				
35 - 49	966.633	934.091	291.662	284.108
50 - 64	6245.846	6030.634	2187.469	2189.818
All ages	3774.079	3653.188	3021.435	2848.261

TABLE 164.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1955 standardised on 1951 Scottish Population.

Age in Years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	0.9962	-	-
15 - 19	1	1.0230	1	1.0269
20 - 24	4	4.3828	2	2.1340
25 - 29	12	12.6276	5	5.2815
30 - 34	34	31.2630	7	6.6591
35 - 39	58	65.4530	20	22.4080
40 - 44	156	160.0092	32	32.2688
45 - 49	333	324.4419	84	82.6560
50 - 54	585	523.9845	165	158.2680
55 - 59	724	671.5824	343	322.5915
60 - 64	947	914.5179	565	535.4505
65 - 69	1241	1272.7696	990	964.9530
70 - 74	1510	1576.4400	1401	1356.5883
75 - 79	1610	1575.2240	1823	1688.0980
80 - 84	1327	1148.3858	1657	1452.8576
85 +	824	754.8664	1552	1413.8720
All ages	9367	9037.9673	8647	8045.1132
Age Groups				
35 - 49	547	549.9041	136	137.3328
50 - 64	2256	2110.0848	1073	1016.3100
Rates per million				
35 - 49	1081.477	1045.523	251.048	244.919
50 - 64	5848.013	5916.634	2318.340	2313.297
All ages	3837.065	3706.035	3238.396	3020.230

TABLE 165.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1956 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	0.8781
10 - 14	-	-	1	0.9901
15 - 19	-	-	-	-
20 - 24	2	2.2176	3	3.2592
25 - 29	13	13.8645	2	2.1352
30 - 34	30	28.1550	7	6.8397
35 - 39	54	59.0166	18	19.5894
40 - 44	147	155.7318	36	37.2636
45 - 49	307	297.7900	89	87.1399
50 - 54	586	521.5400	167	160.3200
55 - 59	827	732.8047	314	288.2206
60 - 64	1041	100.1707	614	576.4232
65 - 69	1320	1353.9240	968	934.2168
70 - 74	1529	1605.4500	1416	1352.5632
75 - 79	1645	1627.2340	1797	1649.8257
80 - 84	1329	1116.2271	1706	1443.2760
85 +	856	747.3736	1616	1442.2800
All ages	9686	9263.4996	8755	8005.2207
Age Groups				
35 - 49	508	512.5384	143	143.9929
50 - 64	2454	2256.5154	1095	1024.9638
Rates per million				
35 - 49	1003.834	974.480	263.460	256.797
50 - 64	6245.053	6327.223	2340.939	2331.986
All ages	3959.982	3798.515	3274.163	3005.254

TABLE 166.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	1	1.0424
20 - 24	1	1.1311	3	3.3036
25 - 29	8	8.6688	5	5.4120
30 - 34	29	27.9676	5	5.0125
35 - 39	64	67.5584	15	15.8565
40 - 44	133	146.9916	37	39.6492
45 - 49	345	335.0295	87	85.2078
50 - 54	605	535.3090	146	139.7804
55 - 59	893	763.4257	323	292.8641
60 - 64	1064	1013.5664	571	526.8617
65 - 69	1279	1302.4057	955	911.4520
70 - 74	1461	1545.4458	1376	1300.1824
75 - 79	1549	1532.2708	1615	1457.2145
80 - 84	1294	1060.6918	1613	1312.0142
85 +	848	702.5680	1515	1309.2630
All ages	9573	9043.6302	8267	7405.1163
Age Groups				
35 - 49	542	549.5795	139	140.7135
50 - 64	2562	2312.9011	1040	959.5062
Rates per million				
35 - 49	1074.340	1044.905	256.652	250.948
50 - 64	6411.748	6485.327	2200.807	2183.058
All ages	3910.252	3708.357	3088.726	2779.968

TABLE 167.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1958 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	1	0.8914	-	-
15 - 19	3	2.9613	2	2.0642
20 - 24	3	3.3664	2	2.2030
25 - 29	4	4.3872	2	2.2008
30 - 34	20	19.5520	7	7.1253
35 - 39	82	83.4432	18	18.4860
40 - 44	138	161.3220	47	52.9549
45 - 49	312	305.6040	73	71.8174
50 - 54	602	529.9406	172	163.6064
55 - 59	859	706.9570	336	300.2496
60 - 64	1116	1057.3216	598	545.9740
65 - 69	1374	1391.9994	921	866.9373
70 - 74	1557	1661.7861	1384	1295.8392
75 - 79	1473	1480.2177	1743	1562.7738
80 - 84	1353	1103.1009	1843	1473.2342
85 +	843	680.1324	1619	1364.4932
All ages	9740	9193.1732	8767	7730.0193
Age Groups				
35 - 49	532	550.3692	138	143.2583
50 - 64	2577	2294.4192	1106	1009.8300
Rates per million				
35 - 49	1063.268	1046.407	256.829	255.487
50 - 64	6341.246	6433.504	2316.206	2297.554
All ages	3960.163	3769.678	3269.244	2901.940

TABLE 168.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422), Scotland 1959 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	0.9589
10 - 14	-	-	-	-
15 - 19	2	1.8932	1	0.8909
20 - 24	1	1.1133	-	-
25 - 29	3	3.3255	3	3.3516
30 - 34	25	24.7950	5	5.2175
35 - 39	82	80.4338	23	23.0552
40 - 44	150	184.3800	42	49.7028
45 - 49	330	327.7890	79	78.1942
50 - 54	616	535.6120	142	133.7498
55 - 59	987	792.3636	330	291.6870
60 - 64	1097	1015.9317	592	531.7936
65 - 69	1440	1459.7280	901	839.1914
70 - 74	1421	1525.5856	1345	1243.4525
75 - 79	1497	1528.1376	1665	1484.8470
80 - 84	1270	1042.7970	1789	1413.3100
85 +	841	664.7264	1684	1384.7532
All ages	9762	9188.6117	8602	7484.1556
Age Groups				
35 - 49	562	592.6028	144	150.9522
50 - 64	2700	2343.9073	1064	957.2304
Rates per million				
35 - 49	1131.056	1126.705	270.354	269.208
50 - 64	6516.356	6572.268	2201.467	2177.880
All ages	3948.235	3767.807	3197.621	2809.640

TABLE 169.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1960 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	3	3.2910	1	1.0965
25 - 29	9	10.1394	2	2.2748
30 - 34	24	24.2160	12	12.5256
35 - 39	71	72.0437	21	21.9135
40 - 44	164	197.3576	31	36.0716
45 - 49	356	356.9612	78	77.1576
50 - 54	678	590.0634	172	162.2132
55 - 59	1034	815.9294	364	319.2644
60 - 64	1189	1063.0849	638	564.0558
65 - 69	1348	1343.8212	1014	920.7120
70 - 74	1451	1573.6095	1373	1268.1028
75 - 79	1425	1468.4625	1687	1478.6555
80 - 84	1258	1028.9182	1692	1319.7600
85 +	894	650.2062	1591	1215.8422
All ages	9904	9198.1042	8676	7399.6455
Age Groups				
35 - 49	591	626.3625	130	135.1427
50 - 64	2901	2469.0777	1174	1045.5334
Rates per million				
35 - 49	1200.171	1190.892	246.192	241.013.
50 - 64	6899.389	6923.243	2412.441	2378.786
All ages	3990.830	3771.700	3218.138	2777.914

TABLE 170.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1961 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	-	-	-	-
20 - 24	3	3.2589	2	2.2100
25 - 29	5	5.7570	-	-
30 - 34	36	37.1520	4	6.3714
35 - 39	86	89.5604	13	13.9984
40 - 44	164	191.8800	33	37.3824
45 - 49	342	354.9276	82	83.4760
50 - 54	678	587.8260	183	171.6540
55 - 59	1046	820.4824	372	326.4672
60 - 64	1348	1160.6280	619	536.3016
65 - 69	1426	1416.0180	998	896.4036
70 - 74	1458	1582.3674	1383	1261.0194
75 - 79	1476	1536.0732	1701	1469.6640
80 - 84	1284	1060.4556	1811	1397.0054
85 +	964	680.0056	1694	1250.3414
All ages	10316	9526.3921	8897	7452.2948
Age Groups				
35 - 49	592	636.3680	128	134.8568
50 - 64	3072	2568.9364	1174	1034.4228
Rates per million				
35 - 49	1216.718	1209.915	245.353	240.503
50 - 64	7207.799	7203.245	2393.808	2353.507
All ages	4150.818	3906.315	3296.964	2797.679

TABLE 171.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1962 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	1	0.8584	1	0.9443
20 - 24	2	2.1250	-	-
25 - 29	12	13.9704	5	5.8620
30 - 34	20	20.7720	3	3.2214
35 - 39	88	94.0984	13	14.3468
40 - 44	330	356.2680	79	83.3055
50 - 54	709	615.6247	177	166.3977
55 - 59	1074	837.3978	375	328.4625
60 - 64	1288	1069.6840	675	577.7325
65 - 69	1392	1368.3360	1026	906.1376
70 - 74	1551	1685.0064	1379	1246.0644
75 - 79	1473	1560.9381	1677	1435.1766
80 - 84	1211	1013.2437	1640	1245.7440
85 +	944	651.2656	1632	1178.9568
All ages	10279	9496.7357	8718	7234.1445
Age Groups				
35 - 49	602	657.5136	130	139.4447
50 - 64	3071	2522.7065	1227	1072.5927
Rates per million				
35 - 49	1249.268	1250.119	251.783	248.686
50 - 64	7124.976	7073.617	2493.107	2440.351
All ages	4120.554	3894.154	3225.948	2715.783

TABLE 172.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1963 standardised on 1951 Scottish Population.

Age in years.	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	1	0.9417
15 - 19	2	1.6664	1	0.9210
20 - 24	3	3.1239	1	1.1021
25 - 29	6	7.0422	3	3.5292
30 - 34	34	35.7986	7	7.6412
35 - 39	80	87.0400	19	21.3503
40 - 44	190	206.6060	45	48.1815
45 - 49	383	437.3094	89	98.7900
50 - 54	701	613.2348	195	184.2945
55 - 59	1133	879.5479	357	310.7685
60 - 64	1480	1179.5600	666	561.7044
65 - 69	1501	1476.8339	998	874.4476
70 - 74	1581	1710.8001	1419	1262.9100
75 - 79	1481	1582.5966	1738	1465.6554
80 - 84	1212	1039.6536	1656	1250.2800
85 +	914	627.9180	1655	1159.8240
All ages	10701	9888.7314	8850	7252.3414
Age Groups				
35 - 49	653	730.9554	153	168.3218
50 - 64	3314	2672.3427	1218	1056.7674
Rates per million				
35 - 49	1371.293	1389.752	300.378	300.185
60 - 64	7610.920	7493.194	2463.378	2404.345
All ages	4281.537	4054.893	3271.521	2722.614

TABLE 173.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1964 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	-	-
10 - 14	-	-	-	-
15 - 19	3	2.4597	-	-
20 - 24	1	1.0239	1	1.0987
25 - 29	8	9.5264	1	1.1811
30 - 34	22	23.5510	6	6.6732
35 - 39	102	113.3016	16	18.2864
40 - 44	203	213.4342	45	47.2275
45 - 49	353	425.3297	78	91.2444
50 - 54	723	642.7470	207	197.2917
55 - 59	1137	873.3297	376	324.9768
60 - 64	1511	1174.8025	671	560.2179
65 - 69	1466	1413.3706	1005	867.0135
70 - 74	1466	1591.0498	1364	1198.4104
75 - 79	1300	1390.2200	1483	1220.2124
80 - 84	1026	882.3600	1473	1087.8105
85 +	827	558.9693	1466	980.3142
All ages	10148	9315.4754	8192	6601.9587
Age Groups				
35 - 49	658	752.0655	139	156.7583
50 - 64	3371	2690.8792	1254	1082.4864
Rates per million				
35 - 49	1397.621	1429.888	277.003	279.563
50 - 64	7705.143	7545.170	2529.756	2462.861
All ages	4059.687	3819.828	3026.564	2478.453

TABLE 174.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1965 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	1	0.8884	2	1.7984
10 - 14	-	-	-	-
15 - 19	3	2.4228	1	0.8961
20 - 24	5	5.1410	2	2.2012
25 - 29	12	14.3736	4	4.7596
30 - 34	31	33.8830	5	5.6735
35 - 39	89	100.8281	14	16.2260
40 - 44	211	230.4331	43	47.1022
45 - 49	347	410.5010	98	112.9548
50 - 54	750	672.6000	209	19 .3233
55 - 59	1154	888.6954	368	319.2032
60 - 64	1540	1181.4880	691	572.7699
65 - 69	1596	1493.5368	1046	888.9954
70 - 74	1550	1662.9950	1394	1191.8700
75 - 79	1347	1474.4262	1607	1324.1680
80 - 84	1074	928.0434	1455	1044.2535
85 +	905	605.4450	1551	1002.5664
All ages	10615	9705.7008	8490	6734.7615
Age Groups				
35 - 49	647	741.7622	155	176.2830
50 - 64	3444	2742.7834	1268	1091.2964
Rates per million				
35 - 49	1394.697	1410.299	313.638	314.383
50 - 64	7873.800	7690.708	2555.936	2482.905
All ages	4250.76	3979.841	3136.661	2528.308

TABLE 175.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) Scotland 1966 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	-	-	-	-
5 - 9	-	-	1	0.8862
10 - 14	-	-	1	0.9613
15 - 19	4	3.2108	-	-
20 - 24	4	4.0432	4	4.3548
25 - 29	6	7.3092	1	1.2131
30 - 34	16	18.1584	9	10.5039
35 - 39	82	95.0954	17	20.0838
40 - 44	203	228.3344	39	44.1168
45 - 49	359	414.2501	71	79.7046
50 - 54	680	630.0200	207	203.4603
55 - 59	1045	800.0520	383	334.7276
60 - 64	1514	1152.4568	682	565.6508
65 - 69	1526	1372.3318	1034	859.9778
70 - 74	1500	1609.3500	1481	1252.4817
75 - 79	1367	1500.2825	1599	1294.8702
80 - 84	1059	933.0849	1565	1098.0040
85 +	879	588.0510	1680	1060.7520
All ages	10244	9356.0305	8779	6831.7489
Age Groups				
35 - 49	644	737.6799	127	143.9052
50 - 64	3239	2582.5288	1277	1103.8387
Rates per million				
35 - 49	1402.745	1402.537	259.290	256.640
50 - 64	7459.696	7241.358	2597.112	2511.441
All ages	4114.221	3836.458	3250.398	2564.719

TABLE 176.

Mortalaty from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales, 1950 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	6	0.761	1	0.127
5 - 9	4	0.520	3	0.393
10 - 14	4	0.542	5	0.684
15 - 19	15	1.929	3	0.407
20 - 24	22	2.573	9	1.144
25 - 29	42	4.652	18	2.063
30 - 34	104	11.515	55	6.427
35 - 39	308	32.110	104	11.445
40 - 44	796	85.130	175	19.483
45 - 49	1739	192.133	415	46.734
50 - 54	2880	317.817	903	101.876
55 - 59	4398	468.211	1770	194.227
60 - 64	7134	736.842	3706	396.320
65 - 69	9650	1021.694	6651	704.780
70 - 74	12125	1333.653	10922	1152.271
75 - 79	12950	1451.760	14273	1510.854
80 - 84	10150	1079.503	13708	1383.768
85 +	6815	650.328	13065	1223.158
All ages	69,142	7391.673	65,786	6756.161
Age Groups.				
35 - 49 years	2843	309.373	694	77.662
50 - 64 years	14412	1522.870	6379	692.423
Rates per million.				
35 - 49	579.0224	588.2052	137.7531	138.5023
50 - 64	4326.6286	4270.0961	1597.1457	1575.3929
All ages	3266.1911	3030.9692	2903.0493	2536.3421.

TABLE 177.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1951 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	3	0.381	2	0.254
5 - 9	4	0.500	2	0.253
10 - 14	3	0.408	1	0.137
15 - 19	5	0.650	4	0.545
20 - 24	19	2.370	11	1.420
25 - 29	46	5.317	23	2.715
30 - 34	122	13.367	34	3.882
35 - 39	303	32.870	93	10.440
40 - 44	786	84.310	208	23.143
45 - 49	1743	187.786	409	45.436
50 - 54	3092	332.718	918	102.873
55 - 59	4559	482.246	1810	196.246
60 - 64	7168	740.354	3681	387.775
65 - 69	10203	1087.181	6979	730.310
70 - 74	12841	1434.057	11631	1183.350
75 - 79	14084	1578.887	15176	1548.438
80 - 84	10697	1130.983	14707	1500.805
85 +	7272	799.796	14089	1448.927
All ages	72,950	7914.181	69,778	7186.949
Age Groups.				
35 - 49 years	2832	304.966	710	79.019
50 - 64 years	14819	1555.318	6409	686.894
Rates per million.				
35 - 49	580.5658	579.8263	141.2373	140.9224
50 - 64	4396.0249	4361.0796	1587.1719	1562.8134
All ages	3465.7228	324 .2245	3067.0300	2698.0650

TABLE 178.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1952 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	2	0.270	2	0.269
5 - 9	-	-	6	0.698
10 - 14	2	0.271	1	0.137
15 - 19	5	0.650	2	0.272
20 - 24	21	2.667	8	1.044
25 - 29	38	4.531	27	3.290
30 - 34	108	11.401	32	3.539
35 - 39	314	35.166	72	8.340
40 - 44	783	84.541	160	17.886
45 - 49	1799	190.537	415	45.682
50 - 54	3231	337.494	871	96.314
55 - 59	4649	483.380	1723	185.017
60 - 64	6919	710.900	3414	356.401
65 - 69	9642	1022.148	6471	671.994
70 - 74	12126	1349.612	10205	1022.480
75 - 79	13212	1461.538	13685	1345.318
80 - 84	10113	1026.955	13200	1290.696
85 +	6845	705.035	13124	1291.008
All ages	69,809	7427.076	63,418	6340.385
Age Groups.				
35 - 49 years	2896	310.244	647	71.908
50 - 64 years	14799	1531.774	6008	637.732
Rates per million				
35 - 49	597.9765	589.8612	129.8675	128.2407
50 - 64	4308.2969	4295.0628	1471.8275	1450.9606
All ages	3305.5069	3045.4944	2778.9317	2380.2549

TABLE 179.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales, 1953 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	8	1.117	1	0.140
5 - 9	-	-	2	0.224
10 - 14	5	0.665	6	0.812
15 - 19	8	1.031	-	-
20 - 24	12	1.516	7	0.926
25 - 29	42	5.086	20	2.495
30 - 34	129	13.075	33	3.520
35 - 39	293	34.638	64	7.830
40 - 44	745	81.117	133	14.920
45 - 49	1745	181.969	439	47.887
50 - 54	3217	327.172	802	87.583
55 - 59	4586	466.772	1616	171.500
60 - 64	6782	695.365	3465	359.071
65 - 69	9390	994.166	6218	640.230
70 - 74	11824	1318.234	10113	1005.040
75 - 79	12753	1403.327	13795	1321.658
80 - 84	10032	996.218	13231	1241.809
85 +	6680	656.764	13240	1283.803
All ages	68,251	7178.232	63,185	6189.448
Age Groups.				
35 - 49	2783	297.724	636	70.637
50 - 64	14585	1489.309	5883	618.154
Rates per million				
35 - 49	583.3159	566.0571	129.6900	125.9740
50 - 64	4169.5254	4175.9918	1425.8362	1406.4169
All ages	3217.4138	2943.4473	2761.9443	2323.5914

TABLE 180.

Mortality from Arteriosclerotic & Degenerati e Heart Disease (420-422) England & Wales 1954 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	1	0.142	2	0.284
5 - 9	1	0.109	3	0.329
10 - 14	5	0.648	2	0.263
15 - 19	9	1.157	4	0.539
20 - 24	14	1.776	6	0.810
25 - 29	46	5.622	16	2.028
30 - 34	146	14.173	40	4.097
35 - 39	310	38.999	75	9.789
40 - 44	858	94.504	168	18.936
45 - 49	1903	198.934	370	40.166
50 - 54	3565	351.538	802	86.175
55 - 59	4899	495.152	1672	174.386
60 - 64	7014	716.901	3340	342.490
65 - 69	9671	1023.917	6179	626.161
70 - 74	12016	1321.664	10064	983.697
75 - 79	12945	1402.319	13667	1276.921
80 - 84	10426	1012.959	13595	1199.732
85 +	6593	609.702	13316	1122.765
All ages	70,782	7290.216	63,321	5894.568
Agw Groups				
35 - 49	3071	332.437	613	68.891
50 - 64	15478	1563.591	5814	603.051
Rates per million				
35 - 49	659.2958	632.0564	127.5224	122.8601
50 - 64	4356.3186	4384.2770	1388.2521	1372.0548
All ages	3324.9718	2989.3665	2754.7638	2212.8900

TABLE 181.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1955 standardised on 1951 Scottish Population.

Age in years	Males.		Females.	
	Crude.	Standardisation	rude.	Standardisation.
0 - 4	1	0.144	2	0.288
5 - 9	4	0.433	2	0.218
10 - 14	2	0.251	-	-
15 - 19	11	1.385	2	0.270
20 - 24	27	3.445	9	1.229
25 - 29	46	5.720	11	1.416
30 - 34	123	12.452	28	2.999
35 - 39	352	42.554	58	7.308
40 - 44	926	102.431	171	19.320
45 - 49	1949	202.614	421	45.676
50 - 54	3674	354.927	878	93.144
55 - 59	5131	502.376	1711	175.555
60 - 64	7364	748.006	3324	337.313
65 - 69	9528	1007.491	6161	620.875
70 - 74	12110	1332.003	10187	991.684
75 - 79	13250	1439.083	13950	1278.015
80 - 84	10753	1022.621	14341	1223.259
85 +	7428	617.950	14378	1168.744
All ages	72,679	7395.886	65,634	5967.313
Age groups.				
35 - 49	3227	347.599	650	72.304
50 - 64	16169	1605.309	5913	606.012
Rates per million				
35 - 49	684.1213	660.8836	13338550	128.9469
50 - 64	4459.1837	4501.2534	1393.2611	1378.7916
All ages	3397.9616	3032.6967	2847.2150	2240.1993

TABLE 182.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1956 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	5	0.717	5	0.718
5 - 9	-	-	-	-
10 - 14	3	0.359	2	0.244
15 - 19	3	0.380	2	0.271
20 - 24	15	1.908	7	0.967
25 - 29	44	5.501	9	1.172
30 - 34	143	14.927	49	5.437
35 - 39	387	45.057	58	7.037
40 - 44	904	101.807	154	17.715
45 - 49	2061	214.126	378	40.961
50 - 54	3858	366.255	805	84.434
55 - 59	5651	534.319	1696	171.593
60 - 64	7327	737.375	3442	345.429
65 - 69	9828	1032.638	6281	626.599
70 - 74	12383	1362.031	10312	993.685
75 - 79	13122	1421.493	13955	1250.117
80 - 84	10814	1007.108	14352	1177.668
85 +	7456	604.779	14428	1132.136
All ages	74,004	7450.780	65,935	5856.183
Age Groups.				
35 - 49	3352	360.990	590	65.713
50 - 62	16836	1637.949	5943	601.456
Rates per million				
35 - 49	706.4278	686.3437	120.7532	117.1925
50 - 64	4546.5839	4592.7753	1383.3799	1368.4258
All ages	3439.3270	3055.2061	2848.1641	2198.4798

TABLE 183.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1957 standardised on 1951 Scottish Population.

Age in years	Males		Females	
	Crude	Standardised	Crude	Standardised
0 - 4	2	0.283	3	0.427
5 - 9	2	0.231	1	0.116
10 - 14	4	0.440	2	0.225
15 - 19	8	0.992	1	0.136
20 - 24	14	1.787	4	0.554
25 - 29	52	6.546	16	2.104
30 - 34	138	14.801	24	2.744
35 - 39	372	41.821	55	6.450
40 - 44	928	107.805	147	17.361
45 - 49	2075	215.978	385	41.820
50 - 54	3942	369.074	801	83.282
55 - 59	5939	541.227	1647	164.234
60 - 64	7483	741.663	3424	338.808
65 - 69	9843	1025.129	6072	598.092
70 - 74	11931	1305.741	10203	969.010
75 - 79	12299	1315.304	13207	1155.639
80 - 84	10097	921.240	13684	1075.672
85 +	6984	526.964	13494	995.547
All ages	72,113	7137.026	63,170	5452.221
Age Groups				
35 - 49	3375	365.604	587	65.631
50 - 64	17,364	1651.964	5872	586.324
Rates per million				
35 - 49	710.9754	695.1162	119.9673	117.0463
50 - 64	4587.5826	4632.0730	1350.1954	1333.9977
All ages	3331.1622	2926.5507	2715.9379	2046.8277

TABLE 184.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1958. standardised on 1951 Scottish Population.

Age in years	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	4	0.558	2	0.280
5 - 9	4	0.477	2	0.241
10 - 14	-	-	-	-
15 - 19	7	0.848	-	-
20 - 24	19	2.392	6	0.821
25 - 29	43	5.487	11	1.460
30 - 34	163	17.836	35	4.085
35 - 39	443	47.793	72	8.112
40 - 44	960	117.575	168	20.890
45 - 49	2171	226.670	416	45.296
50 - 54	4192	387.647	829	85.397
55 - 59	6531	575.701	1784	175.248
60 - 64	7772	759.565	3478	339.136
65 - 69	9989	1036.439	6237	608.295
70 - 74	12231	1345.312	10055	946.558
75 - 79	12728	1357.708	13878	1197.658
80 - 84	10632	974.997	14321	1084.465
85 +	7348	541.834	14576	1052.489
All ages	75,237	7398.839	65,770	5570.433
Age Groups.				
35 - 49	3574	392.038	656	74.298
50 - 64	18495	1722.913	6091	599.781
Rates per million				
35 - 49	755.9222	745.3747	134.5917	132.5030
50 - 64	4790.2095	4831.0126	1382.7469	1364.6149
All ages	3460.1269	3033.9076	2814.8941	2091.2059

TABLE 185.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1959 standardised on 1951 Scottish Population.

Age in years	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	4	0.546	1	0.137
5 - 9	-	-	2	0.246
10 - 14	5	0.523	-	-
15 - 19	5	0.578	4	0.518
20 - 24	11	1.366	8	1.074
25 - 29	52	6.715	13	1.756
30 - 34	153	17.019	32	3.799
35 - 39	509	52.692	74	7.999
40 - 44	908	117.927	159	20.977
45 - 49	2110	220.436	368	39.997
50 - 54	4148	380.865	831	85.182
55 - 59	6534	558.951	1781	172.160
60 - 64	7975	761.214	3487	335.132
65 - 69	9883	1019,066	6187	595.431
70 - 74	11765	1294.056	9844	91[illegible].628
75 - 79	11771	1255.624	13505	1149.681
80 - 84	9764	890.858	13701	1011.819
85 +	7103	512.126	14227	1000.684
All ages	72,700	7090.562	64,224	5344.220
Age Groups.				
35 - 49	3527	391.055	601	68.973
50 - 64	18657	1701.030	6099	592.474
Rates per million.				
35 - 49	748.5144	743.5057	123.6626	123.0064
50 - 64	4740.0915	4769.6531	1368.7163	1347.9901
All ages	3321.9100	2907.4980	2732.8199	2006.2829

TABLE 186.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1960 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	4	0.532	3	0.401
5 - 9	5	0.613	1	0.124
10 - 14	4	0.416	2	0.212
15 - 19	5	0.558	3	0.375
20 - 24	16	1.955	9	1.191
25 - 29	49	6.340	12	1.635
30 - 34	168	18.990	23	2.763
35 - 39	564	60.737	74	8.342
40 - 44	1017	126.968	167	21.209
45 - 49	2332	244.235	379	41.193
50 - 54	4264	388.762	861	87.934
55 - 59	6901	576.303	1862	177.393
60 - 64	8663	798.902	3655	345.277
65 - 69	10515	1073.560	6398	607.164
70 - 74	12025	1313.827	10002	918.364
75 - 79	12296	1301.667	13730	1148.075
80 - 84	9910	886.182	14237	1014.045
85 +	7326	505.728	14776	988.101
All ages	76,064	7306.275	66,194	5363.798
Age Groups.				
35 - 49	3913	431.940	620	70.744
50 - 64	19828	1763.967	6378	610.604
Rates per million				
35 - 49	832.9076	821.2396	127.9934	126.1648
50 - 64	4937.2510	4946.1271	1415.1320	1389.2393
All ages	3446.4884	2995.9516	2794.7646	2013.6327

TABLE 187.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1961 standardised on 1951 Scottish Population.

Age in years.	Males.		Females	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	3	0.386	4	0.517
5 - 9	1	0.122	2	0.248
10 - 14	3	0.313	-	-
15 - 19	12	1.266	6	0.717
20 - 24	18	2.094	6	0.800
25 - 29	51	6.473	15	2.064
30 - 34	153	17.121	25	3.042
35 - 39	519	57.146	74	8.646
40 - 44	1053	124.898	181	22.174
45 - 49	2395	253.504	394	43.450
50 - 54	4362	395.926	867	88.385
55 - 59	7134	583.968	1826	171.489
60 - 64	9185	818.576	3708	345.660
65 - 69	10602	1060.274	6532	610.840
70 - 74	12199	1330.630	10391	947.981
75 - 79	12345	1300.262	13960	1143.631
80 - 84	10081	905.979	14727	1030.640
85 +	7523	530.620	15650	1036.343
All ages	77,639	7389.558	68,368	5456.627
Age Groups				
35 - 49	3967	435.548	649	74.270
50 - 64	20681	1798.470	6401	605.534
Rates per million				
35 - 49	842.4294	828.0994	134.7591	132.4530
50 - 64	5060.1908	5042.8728	1406.8132	1377.7041
All ages	3474.4026	3030.1019	2870.1931	2048.4818

TABLE 188.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1962 standardised on 1951 Scottish Population.

Age in years	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	5	0.623	4	0.501
5 - 9	-	-	1	0.122
10 - 14	2	0.221	2	0.225
15 - 19	12	1.164	10	1.100
20 - 24	17	2.014	8	1.054
25 - 29	50	6.285	16	2.184
30 - 34	151	16.819	30	3.665
35 - 39	576	64.755	81	9.721
40 - 44	1235	140.486	193	22.907
45 - 49	2452	265.186	408	46.002
50 - 54	4521	410.882	919	93.915
55 - 59	7591	613.148	1937	180.166
60 - 64	9183	863.799	3913	359.757
65 - 69	11292	1101.410	6726	618.900
70 - 74	12767	1381.096	10473	943.408
75 - 79	12292	1291.434	13974	1130.035
80 - 84	10203	912.383	14835	1022.888
85 +	7914	558.198	16018	1025.681
All ages	81,063	7629.903	69,548	5462.231
Age Groups				
35 - 49	4263	470.427	682	78.630
50 - 64	22095	1887.829	6769	633.838
Rates per million				
35 - 49	903.3694	894.4142	142.4692	140.2287
50 - 64	5339.5360	5293.4336	1477.9476	1442.1010
All ages	3578.7824	3128.6558	2895.6616	2050.5856

TABLE 189.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1963 standardised on 1951 Scottish Population.

Age in years	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	5	0.604	5	0.607
5 - 9	1	0.118	1	0.120
10 - 14	2	0.226	1	0.116
15 - 19	14	1.301	4	0.421
20 - 24	25	2.902	9	1.151
25 - 29	42	5.203	16	2.141
30 - 34	178	19.680	32	3.949
35 - 39	542	61.422	84	10.360
40 - 44	1375	149.218	203	23.180
45 - 49	2451	282.245	420	49.915
50 - 54	4834	444.452	893	91.057
55 - 59	7896	633.804	2024	187.947
60 - 64	10710	881.326	3986	363.137
65 - 69	11632	1155.767	6825	625.689
70 - 74	13033	1406.613	10852	966.674
75 - 79	12584	1359.336	14239	1149.486
80 - 84	10185	908.512	15116	1032.120
85 +	8050	553.937	16546	978.282
All ages	83,559	7866.666	71,256	5486.352
Age Groups				
35 - 49	4368	492.885	707	83.455
50 - 64	23440	1959.582	6903	642.141
Rates per million				
35 - 49	931.7406	937.1132	149.6138	148.8336
50 - 64	5597.8793	5494.6276	1501.0111	1460.9919
All ages	3659.4114	3225.7409	2945.2295	2059.6409

TABLE 190.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1964 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	3	0.353	6	0.708
5 - 9	4	0.463	2	0.235
10 - 14	2	0.231	1	0.118
15 - 19	13	1.188	7	0.728
20 - 24	20	2.253	2	0.250
25 - 29	52	6.358	11	1.449
30 - 34	168	18.639	34	4.266
35 - 39	608	69.589	83	10.429
40 - 44	1448	153.136	226	25.221
45 - 49	2438	290.858	424	52.583
50 - 54	4828	443.616	868	88.309
55 - 59	7796	620.273	1946	179.635
60 - 64	10820	862.170	3859	345.720
65 - 69	11323	1102.362	6513	588.521
70 - 74	12245	1307.999	10019	880.209
75 - 79	11581	1241.692	12958	1025.716
80 - 84	9105	802.615	13714	914.148
85 +	7245	482.184	15054	847.254
All ages	79,699	7405.979	65,727	4965.499
Age Groups.				
35 - 49	4494	513.583	733	88.233
50 - 64	23444	1926.059	6673	613.664
Rates per million				
35 - 49	963.3234	976.4659	156.8820	157.3546
50 - 64	5229.1149	5400.6298	1439.5427	1396.2013
All ages	3458.6026	3036.8354	2698.4186	1864.1065

TABLE 191.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1965 standardised on 1951 Scottish Population.

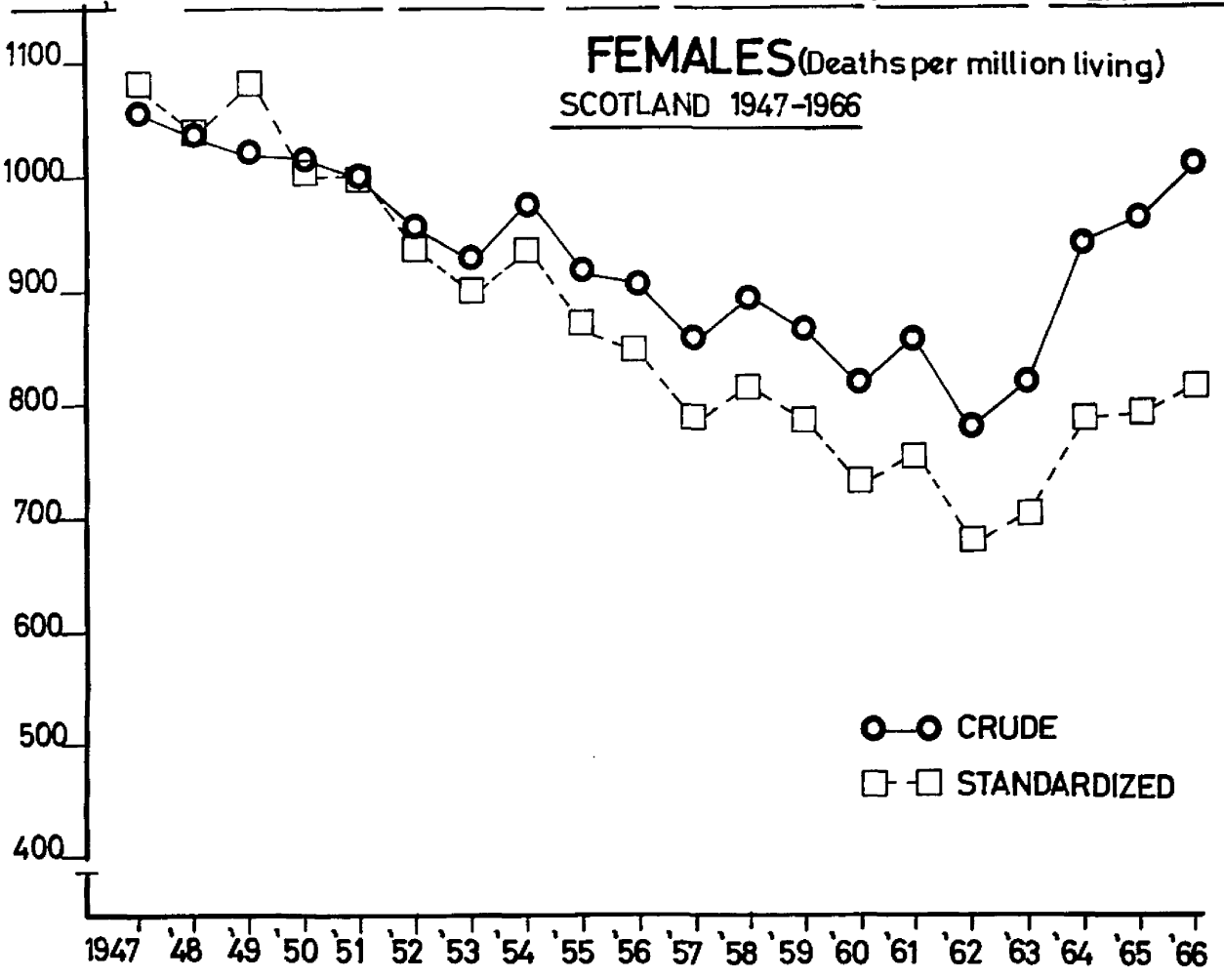
Age in years	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	5	0.573	13	1.496
5 - 9	1	0.113	1	0.115
10 - 14	6	0.702	2	0.239
15 - 19	10	0.909	7	0.724
20 - 24	19	2.074	10	1.212
25 - 29	42	5.110	10	1.303
30 - 34	182	20.265	42	5.302
35 - 39	622	71.830	90	11.459
40 - 44	1541	166.712	253	29.001
45 - 49	2529	295.701	409	50.115
50 - 54	5036	463.649	960	97.848
55 - 59	7910	625.649	2060	189.197
60 - 64	11586	906.350	4016	354.613
65 - 69	12122	1135.916	6904	613.786
70 - 74	12686	1343.295	10445	903.273
75 - 79	12086	1288.235	13314	1038.625
80 - 84	9430	823.192	13923	904.870
85 +	7514	489.545	15932	856.887
All ages	83,327	7639.820	68,391	5060.065
Age Groups				
35 - 49	4692	534.243	752	90.575
50 - 64	24532	1995.648	7036	641.658
Rates per million				
35 - 49	1010.7930	1015.7464	162.5911	161.5314
50 - 64	5747.2180	5595.7559	1509.4825	1459.8930
All ages	3587.5059	3132.7223	2787.3964	1899.6078

TABLE 192.

Mortality from Arteriosclerotic & Degenerative Heart Disease (420-422) England & Wales 1966 standardised on 1951 Scottish Population.

Age in years.	Males.		Females.	
	Crude.	Standardised.	Crude.	Standardised.
0 - 4	7	0.792	5	0.568
5 - 9	3	0.328	2	0.222
10 - 14	4	0.469	4	0.479
15 - 19	21	1.918	5	0.517
20 - 24	20	2.096	10	1.171
25 - 29	60	7.324	16	2.093
30 - 34	171	19.114	37	4.701
35 - 39	577	66.834	92	11.830
40 - 44	1473	164.868	204	24.303
45 - 49	2641	295.483	451	53.177
50 - 54	4883	457.146	953	98.878
55 - 59	7993	630.360	2034	185.940
60 - 64	11345	877.842	3974	346.286
65 - 69	12661	1138.616	6845	601.525
70 - 74	12769	1344.691	10303	878.928
75 - 79	11858	1260.719	13397	1035.521
80 - 84	9311	812.403	14145	900.527
85 +	7697	500.459	16412	857.560
All ages	83,494	7581.462	68,889	5004.226
Age Groups.				
35 - 49	4691	527.185	747	89.310
50 - 64	24221	1965.348	6961	631.104
Rates per million				
35 - 49	1009.5554	1002.3272	162.1939	159.2754
50 - 64	5684.4798	5510.7953	1494.1295	1435.8806
All ages	3569.2789	3108.7925	2790.9605	1878.6452

CRUDE and STANDARDIZED MORTALITY RATES (Direct method) CEREBRAL HAEMORRHAGE (ISC 331)



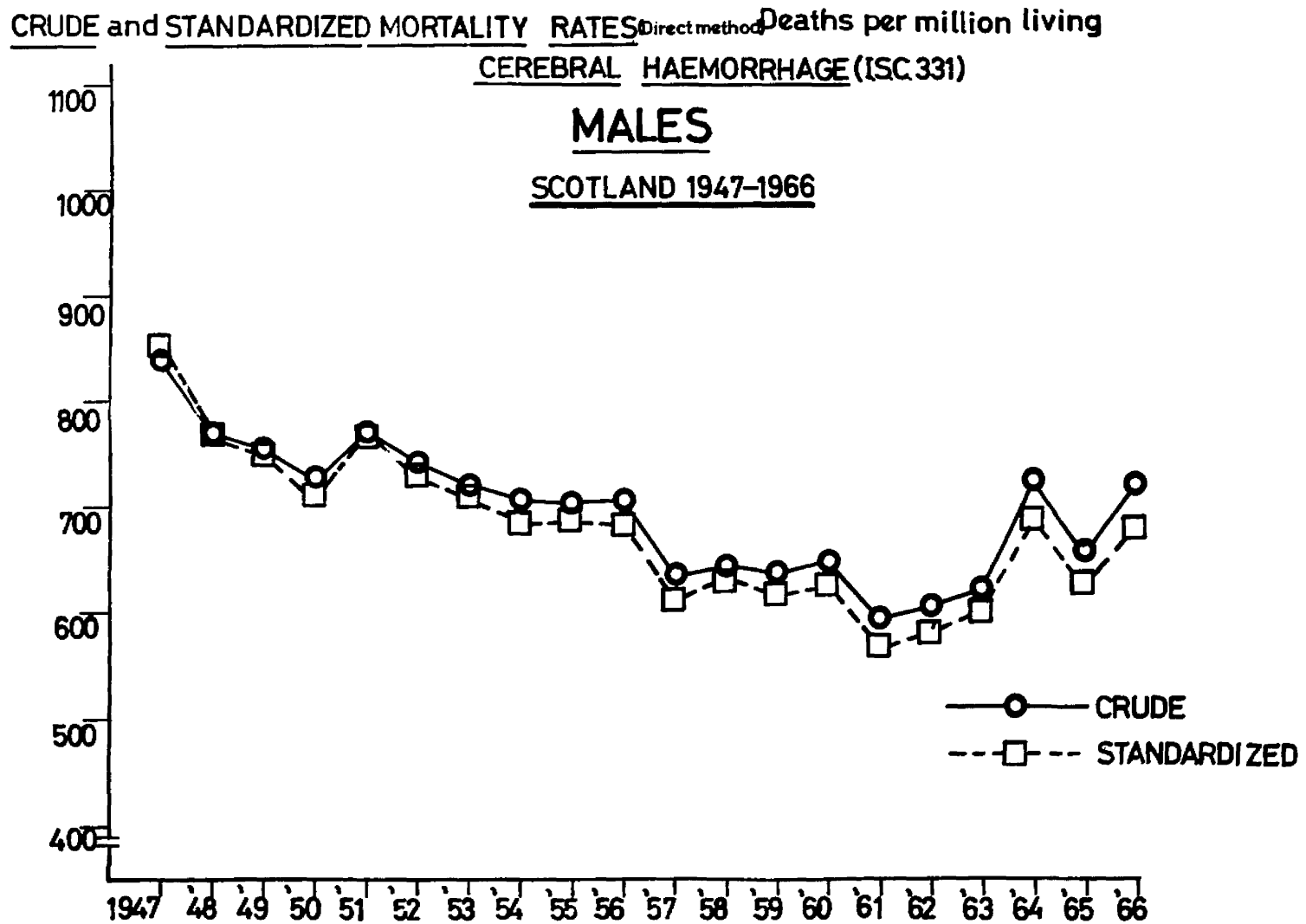

CRUDE and STANDARDIZED MORTALITY RATES (Direct method) Deaths per million living
CEREBRAL HAEMORRHAGE (ISC 331)
MALES
SCOTLAND 1947–1966
1100
1000
900
800
700
600
500
400
1947 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66
CRUDE
STANDARDIZED

FIGURE 3.

CRUDE and STANDARDIZED MORTALITY RATES (Direct method) CEREBRAL THROMBOSIS and EMBOLISM (I.S.C. 332)

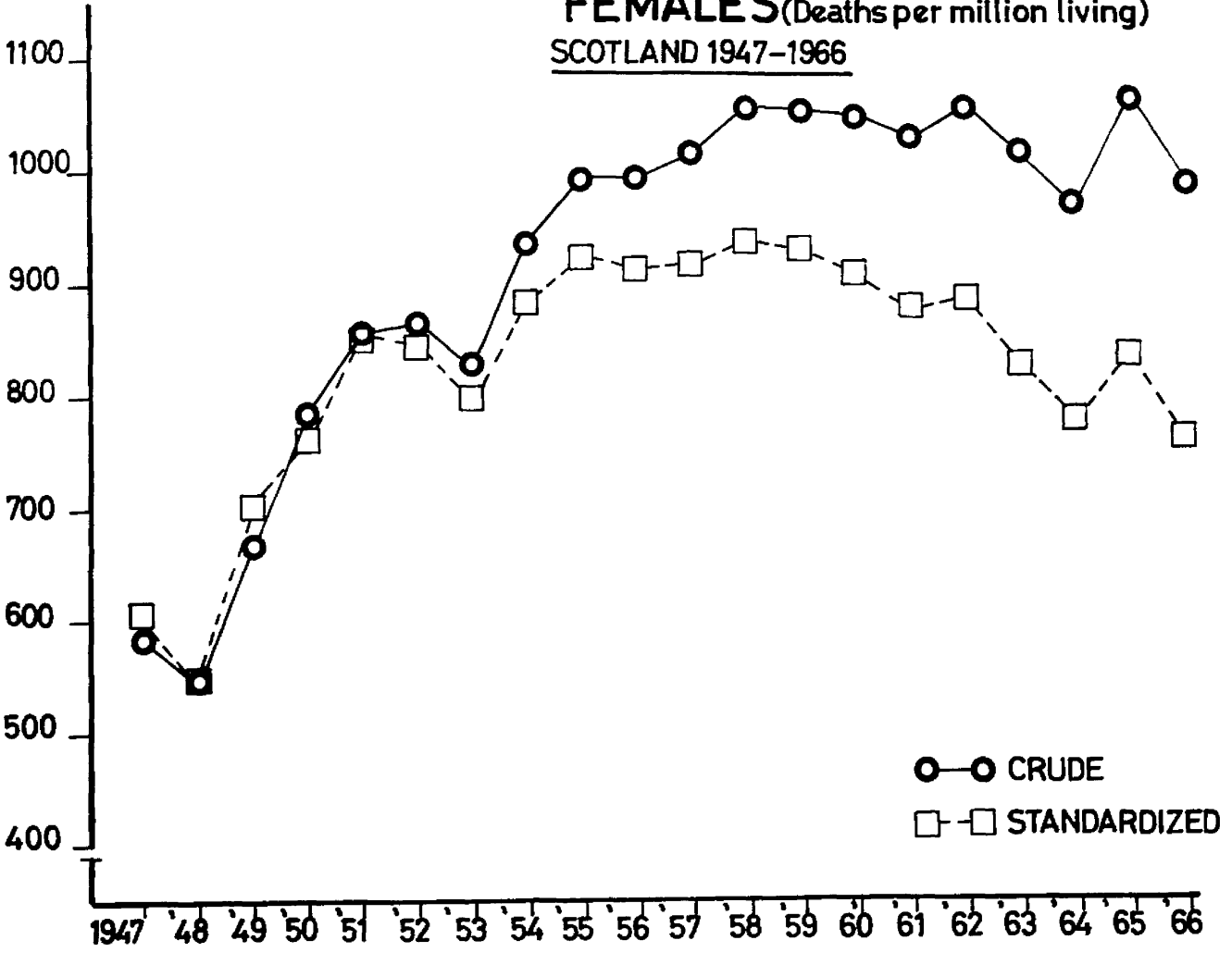


FIGURE 4.

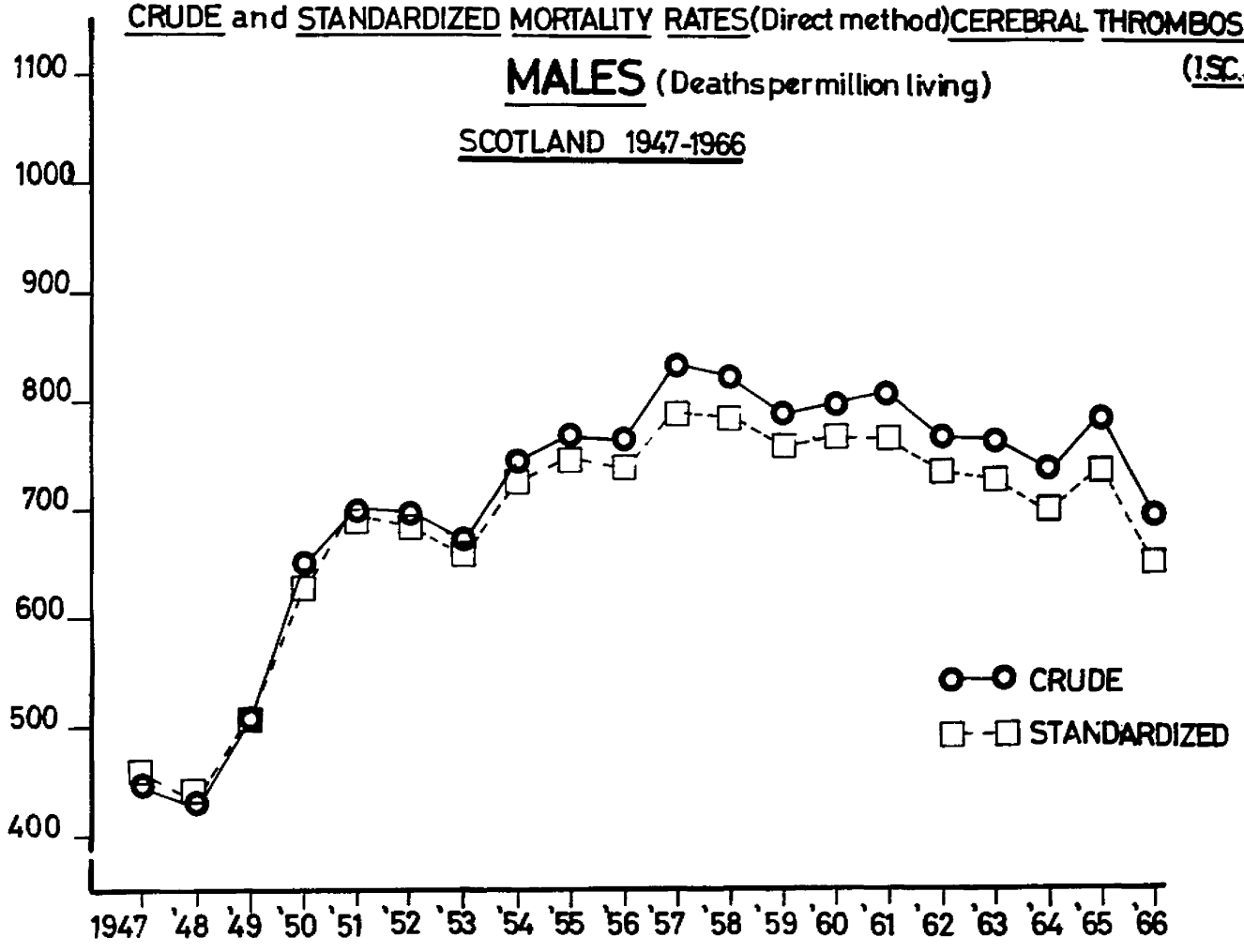

CRUDE and STANDARDIZED MORTALITY RATES (Direct method) CEREBRAL THROMBOSIS and EMBOLISM
(I.S.C. 332)
MALES (Deaths per million living)
SCOTLAND 1947-1966
1100
1000
900
800
700
600
500
400
1947 '48 '49 '50 '51 '52 '53 '54 '55 '56 '57 '58 '59 '60 '61 '62 '63 '64 '65 '66
CRUDE
STANDARDIZED

FIGURE 5.

FIGURE 6

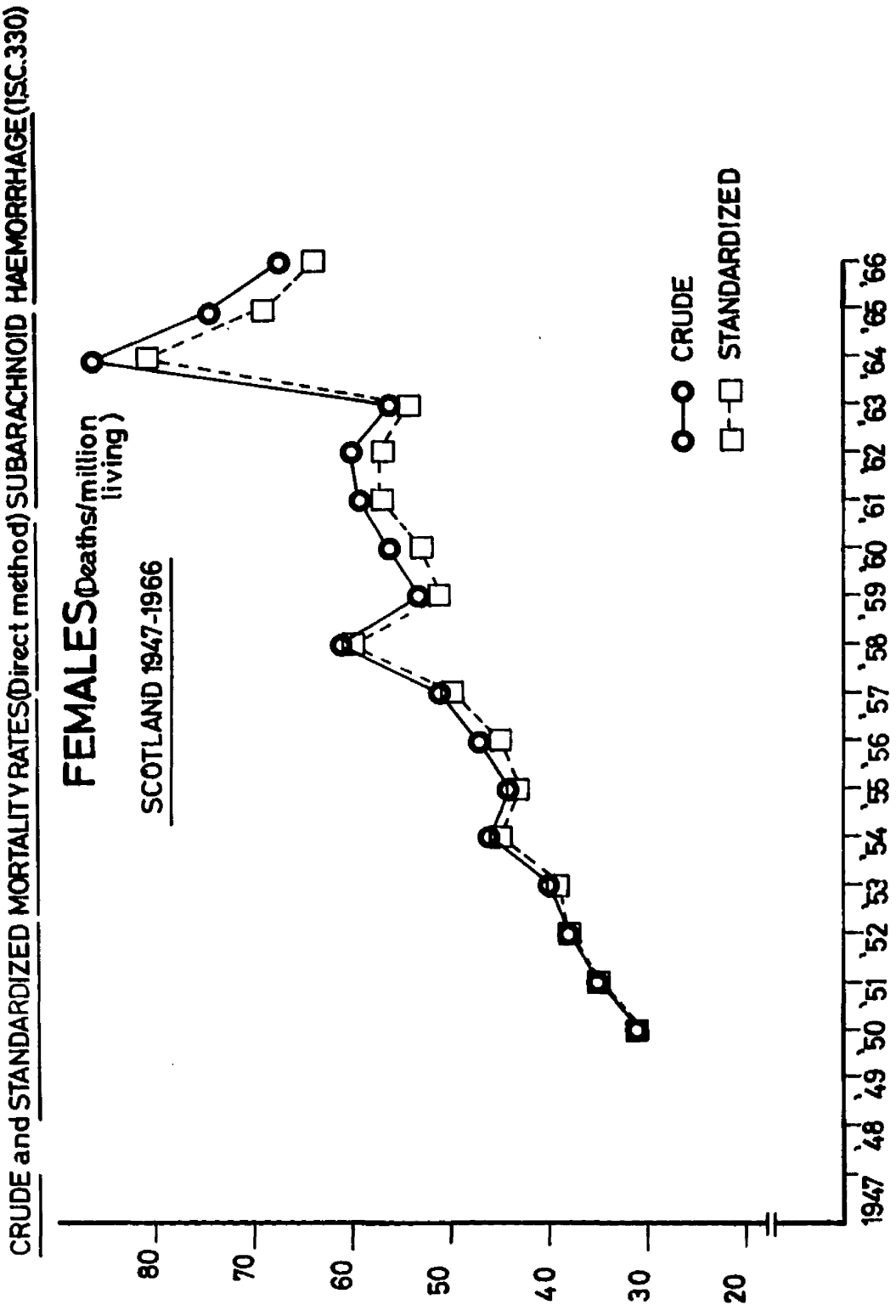

CRUDE and STANDARDIZED MORTALITY RATES (Direct method) SUBARACHNOID HAEMORRHAGE (I.S.C. 330)
FEMALES (Deaths/million living)
SCOTLAND 1947-1966
CRUDE
STANDARDIZED
80
70
60
50
40
30
20
1947
'48
'49
'50
'51
'52
'53
'54
'55
'56
'57
'58
'59
'60
'61
'62
'63
'64
'65
'66

FIGURE 7.

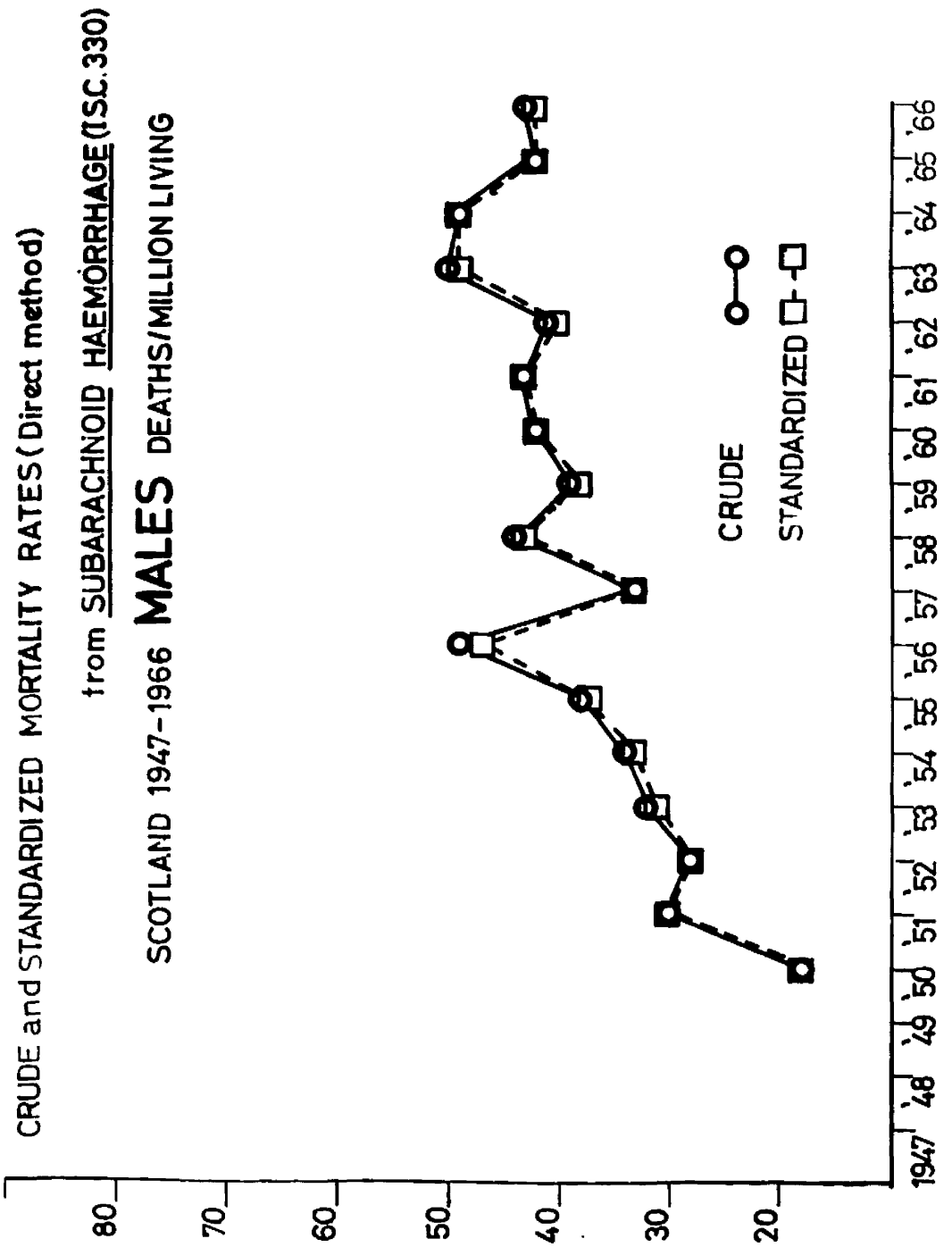

CRUDE and STANDARDIZED MORTALITY RATES (Direct method)
from SUBARACHNOID HAEMORRHAGE (ISC.330)
SCOTLAND 1947-1966 MALES DEATHS/MILLION LIVING
80
70
60
50
40
30
20
1947
'48
'49
'50
'51
'52
'53
'54
'55
'56
'57
'58
'59
'60
'61
'62
'63
'64
'65
'66
CRUDE
STANDARDIZED

FIGURE 8.

CEREBRAL HAEMORRHAGE

I.S.C. 331

DIRECT STANDARDISED RATE (LOG SCALE)

FEMALES
(rate - million)
SCOTLAND 1947-1966.

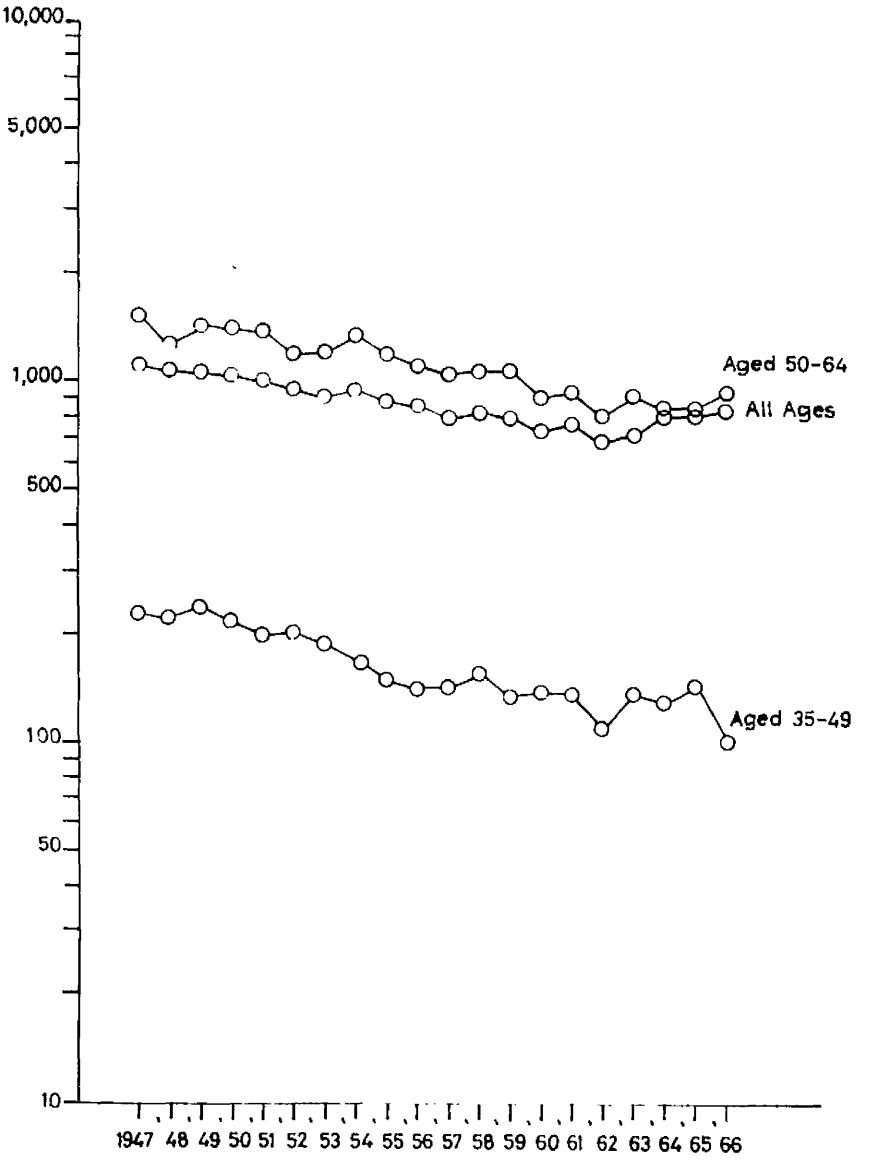


FIGURE 9.

CEREBRAL HAEMORRHAGE

I.S.C. 331

DIRECT STANDARDISED RATE (LOG SCALE)

MALES
(rate - million)
SCOTLAND 1947-1966.

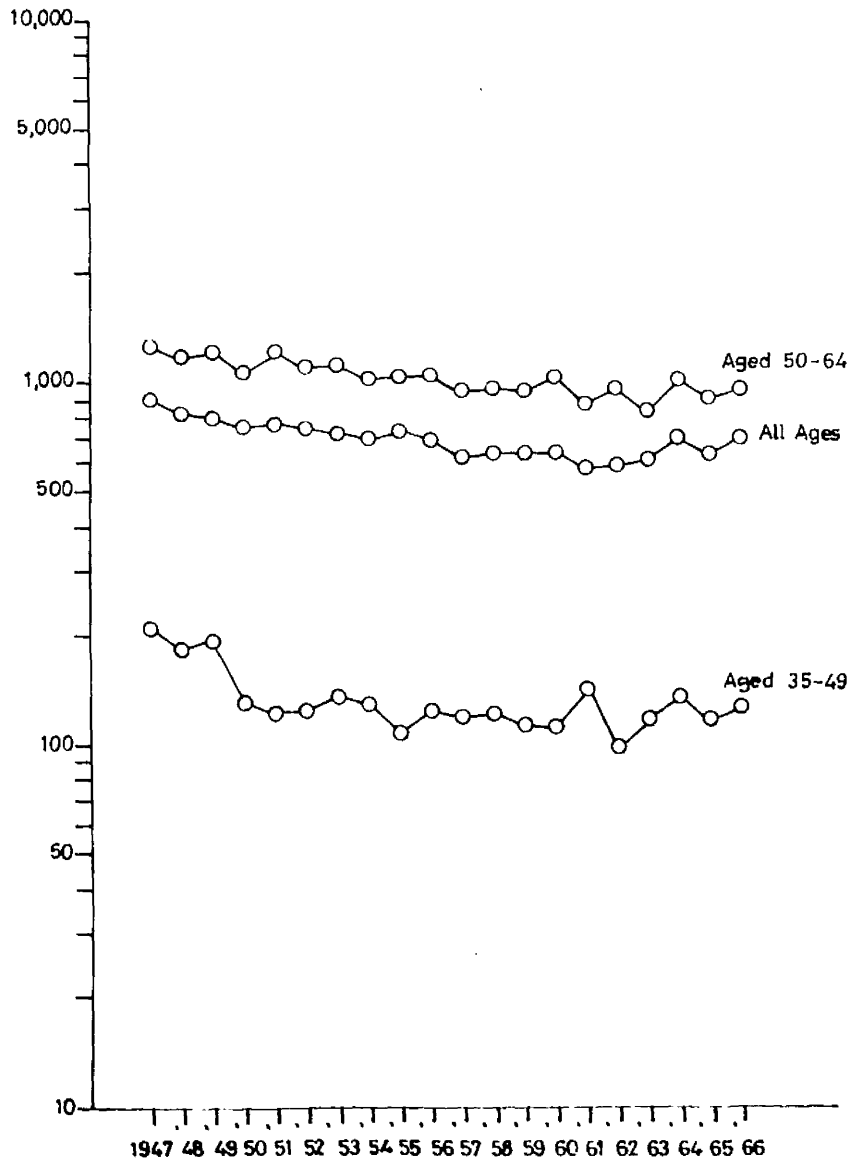


FIGURE 10.

CEREBRAL EMBOLISM

: S.C. 332

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
SCOTLAND 1947 - 1966

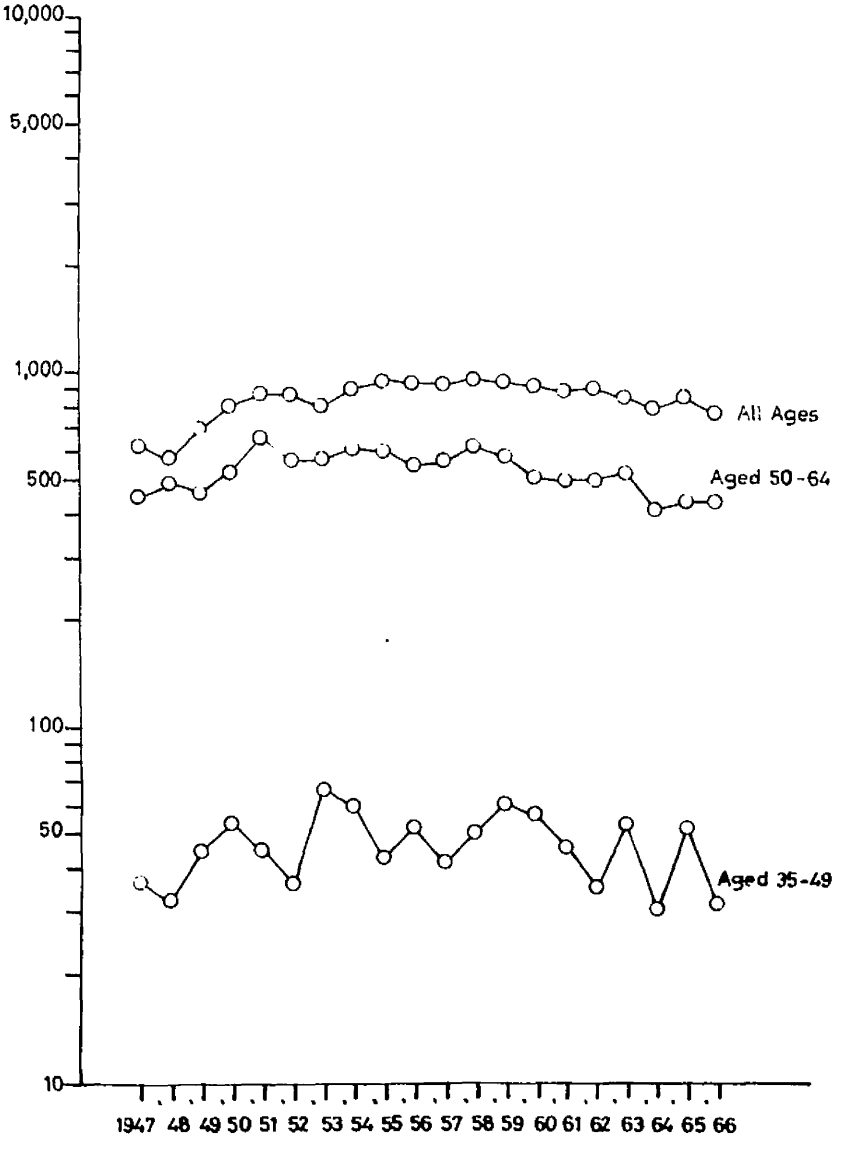


FIGURE 11.

CEREBRAL EMBOLISM

I.S.C. 332

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
SCOTLAND 1947 - 1966.

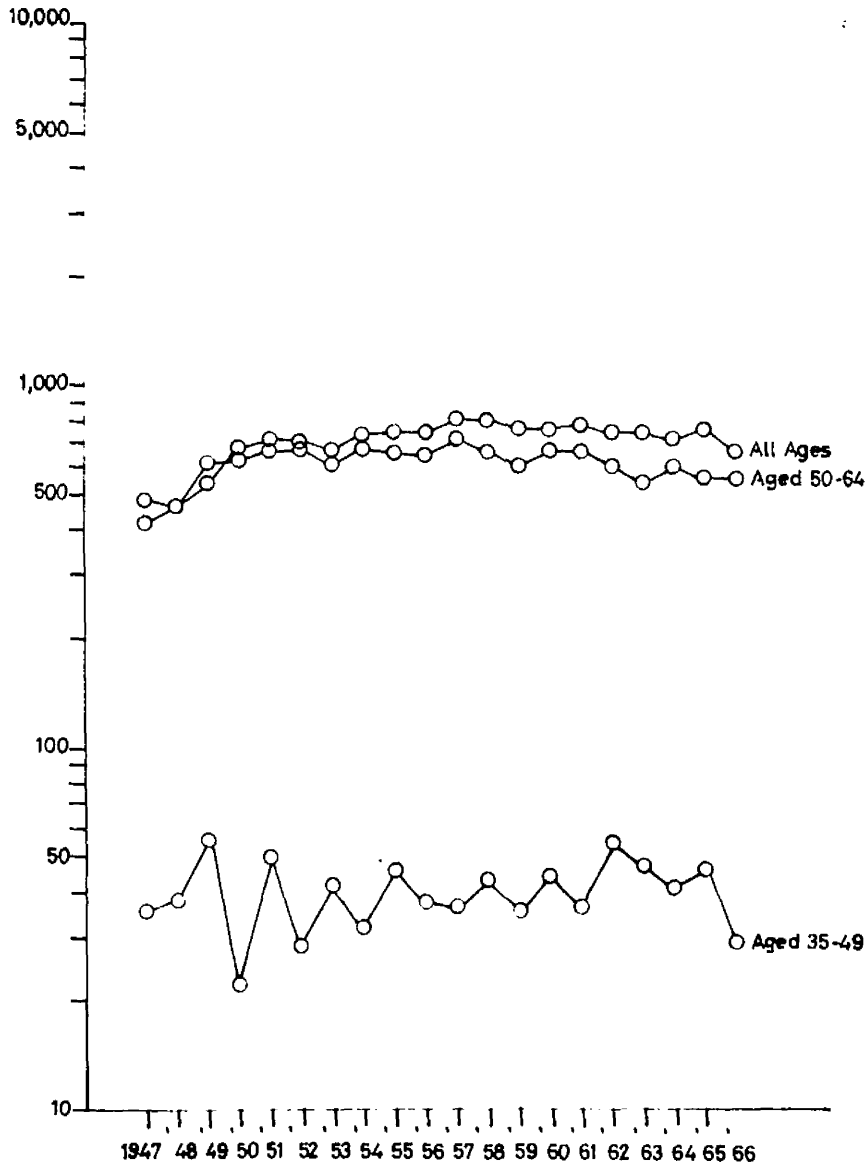


FIGURE 12.

SUBARACHNOID HAEMORRHAGE

I.S.C. 330

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
SCOTLAND 1950 - 1966.

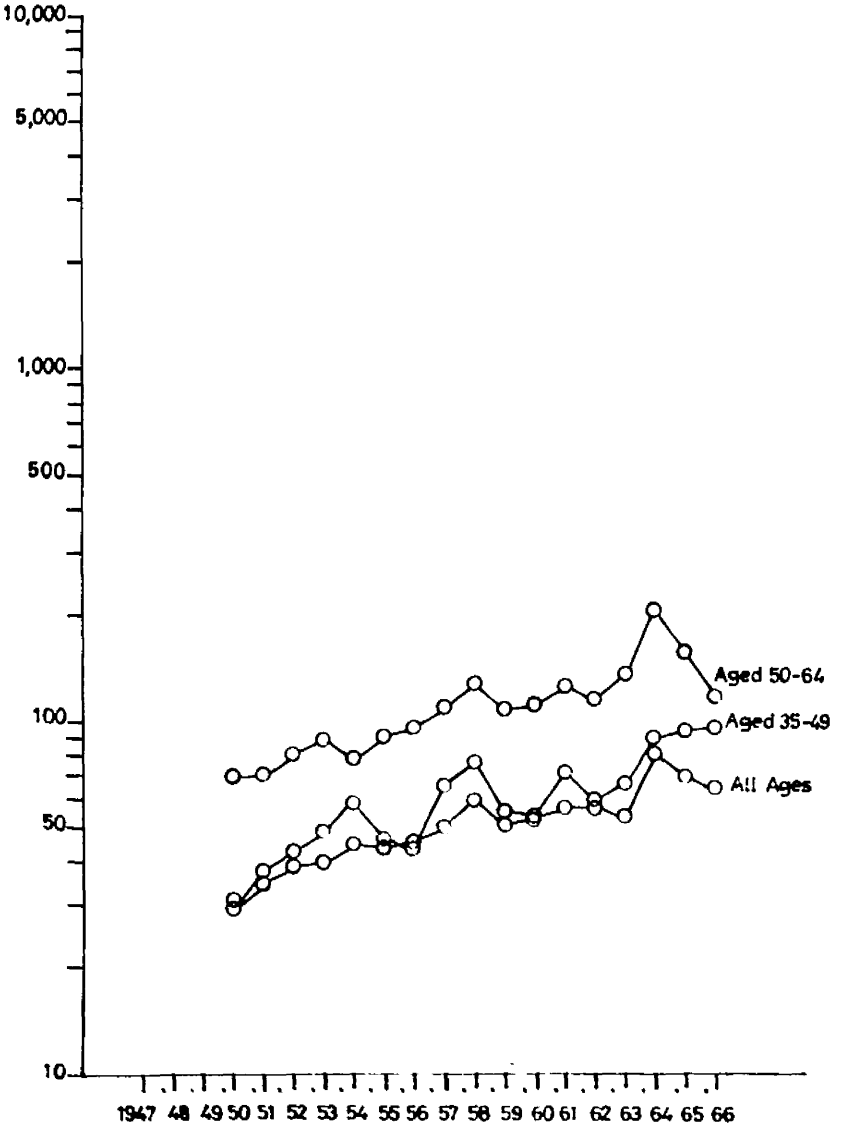


FIGURE 13.

SUBARACHNOID HAEMORRHAGE

I.S.C. 330

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate-million
SCOTLAND 1950-1966.

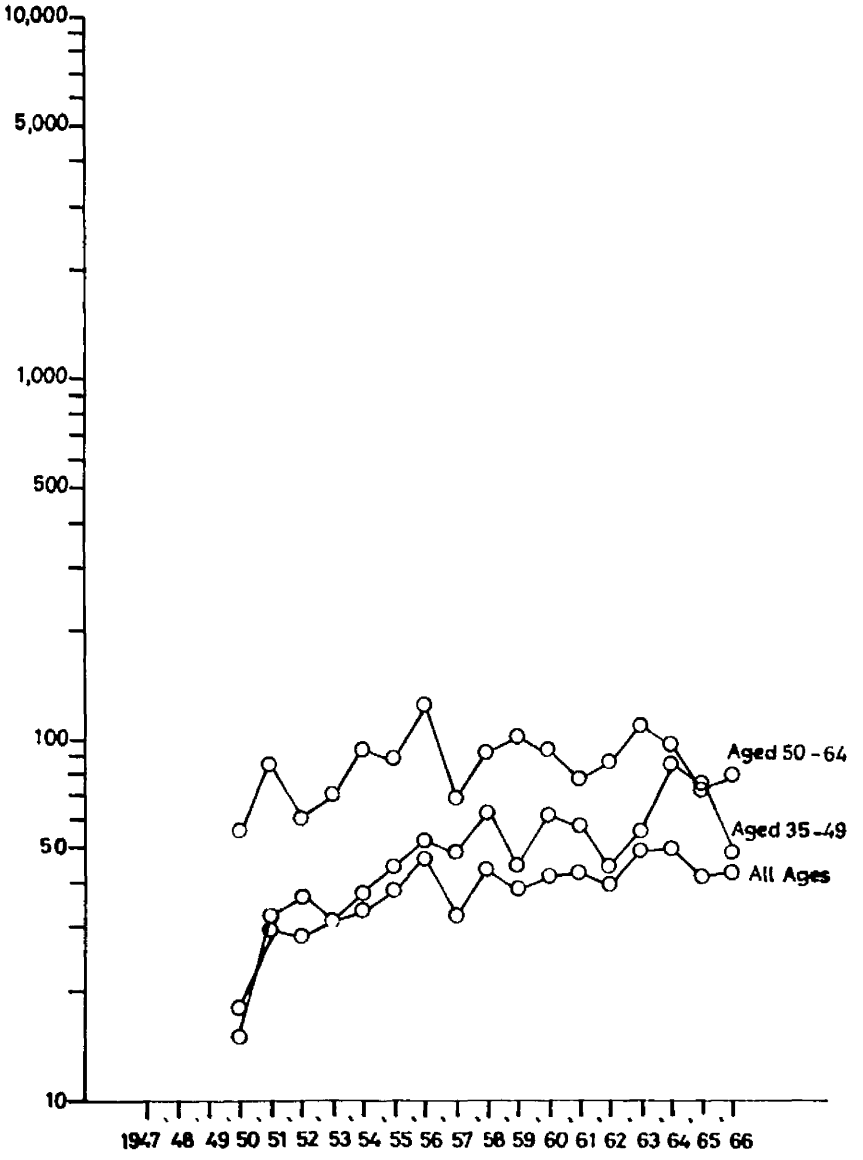


FIGURE 14.

CEREBRAL VASCULAR DISEASE

I.S.C. 330-334

DIRECT STANDARDISED RATE (LOG SCALE)

FEMALES
(rate - million)
SCOTLAND 1947 - 1966.

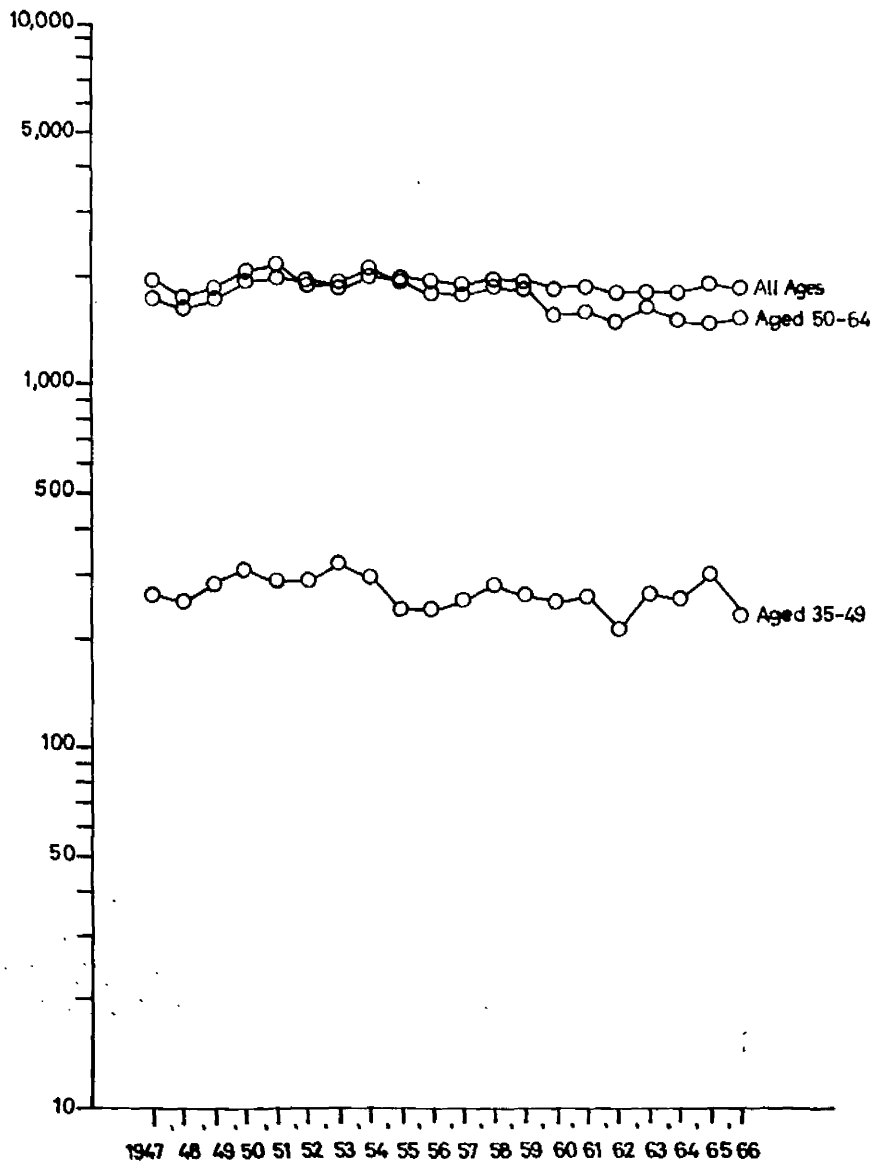


FIGURE 15.

CEREBRAL VASCULAR DISEASE

I.S.C. 330-334

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate-million)
SCOTLAND 1947-1966.

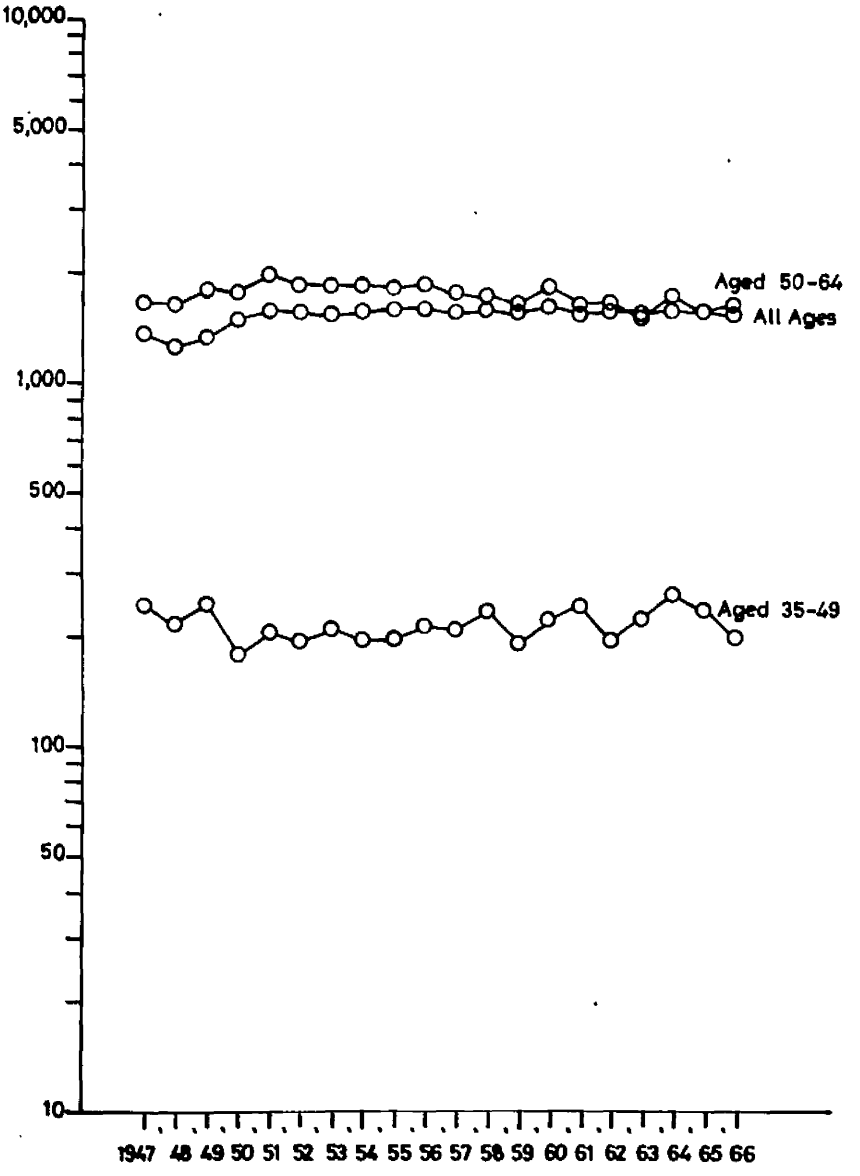


FIGURE 16.

CEREBRAL HAEMORRHAGE

I.S.C. 331

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
ENGLAND AND WALES 1947 - 1966.

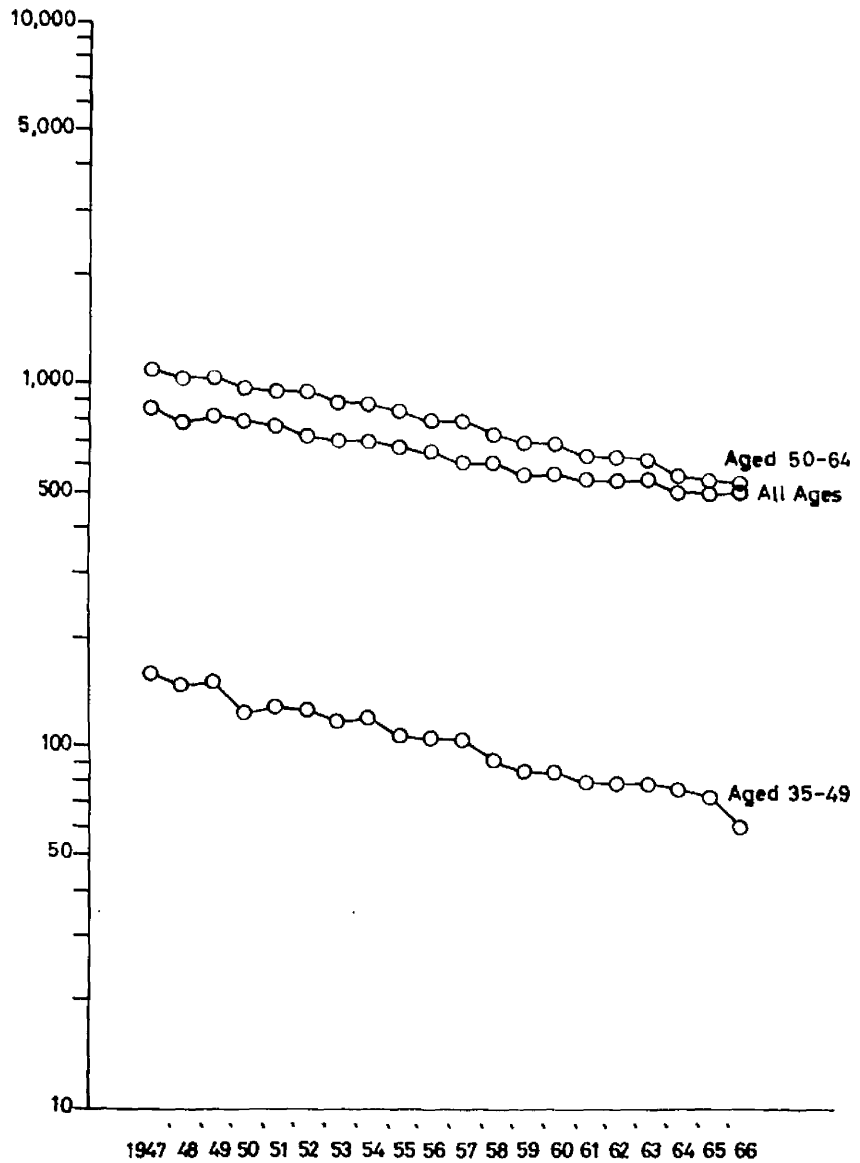


FIGURE 17.

CEREBRAL HAEMORRHAGE

I.S.C 331

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
ENGLAND AND WALES 1947 - 1966

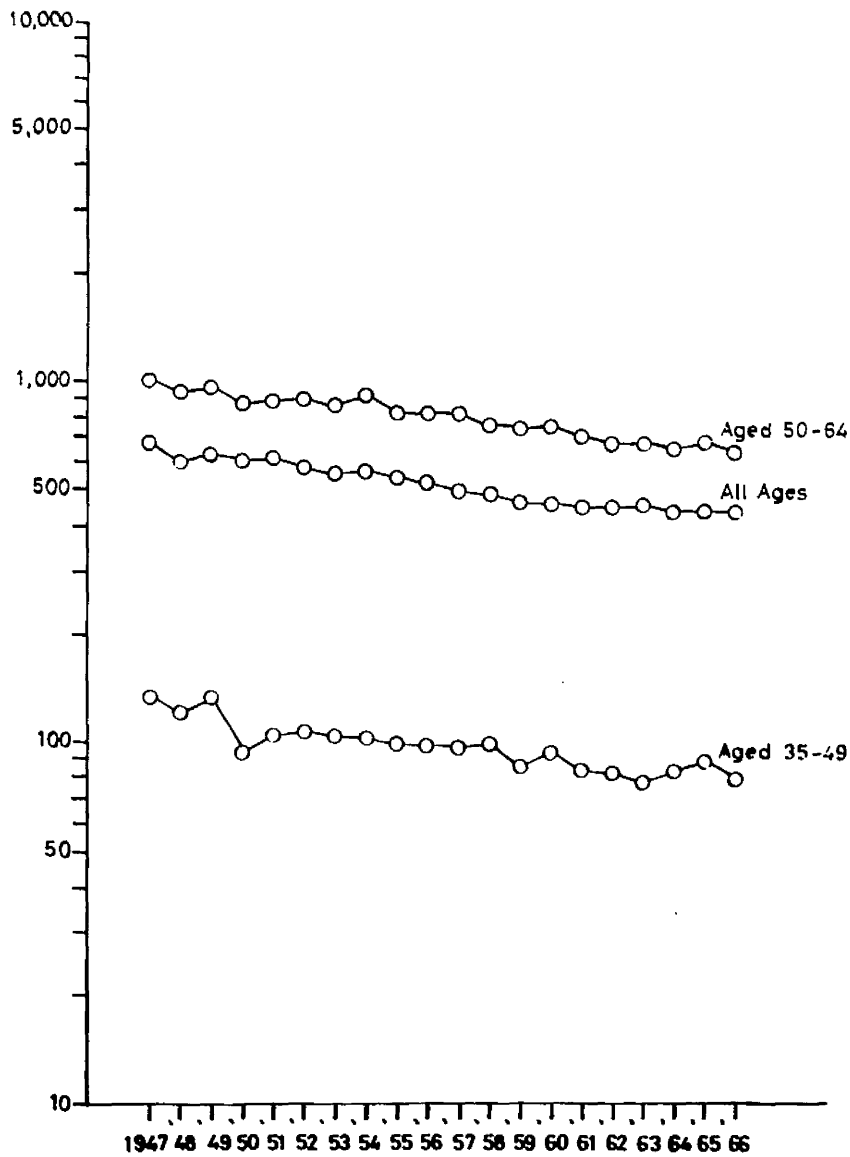


FIGURE 18.

CEREBRAL EMBOLISM

I.S.C. 332

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate-million)
ENGLAND AND WALES 1947-1966.

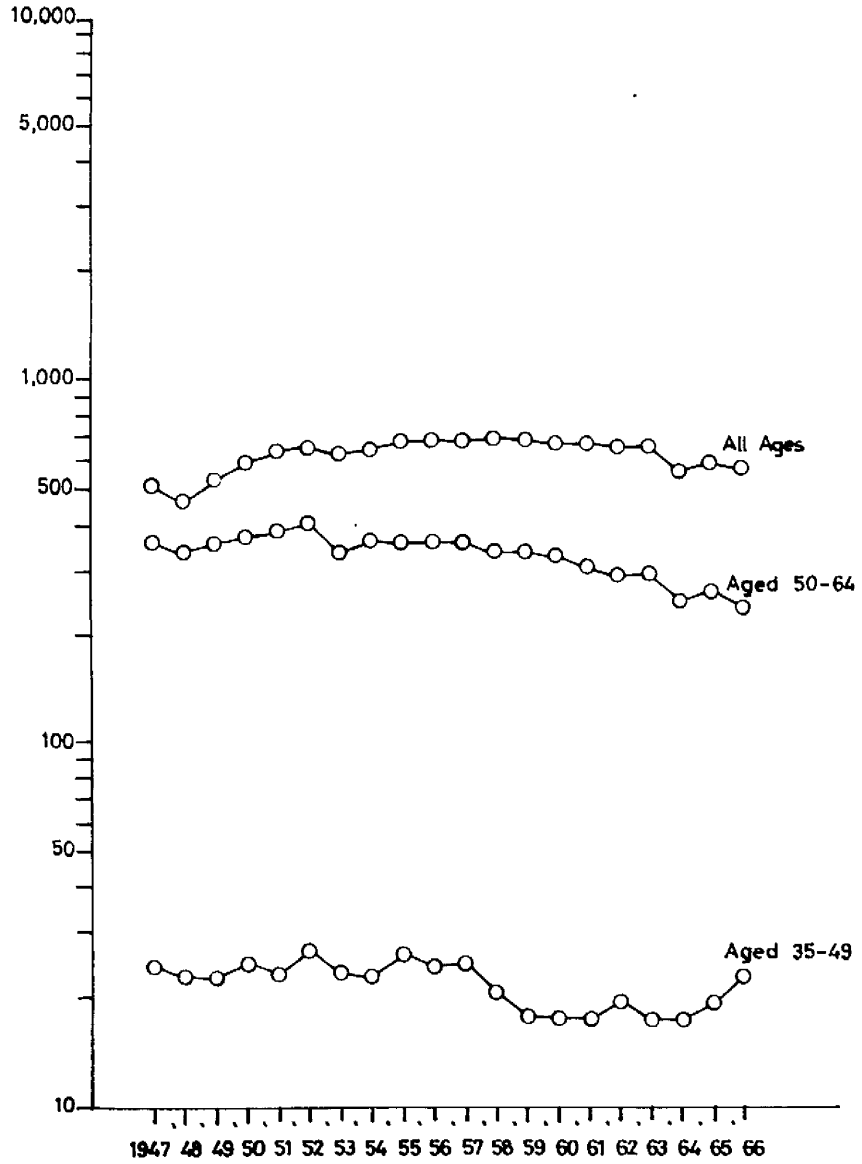


FIGURE 19.

CEREBRAL EMBOLISM

I.S.C 332

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
ENGLAND AND WALES 1947-1966.

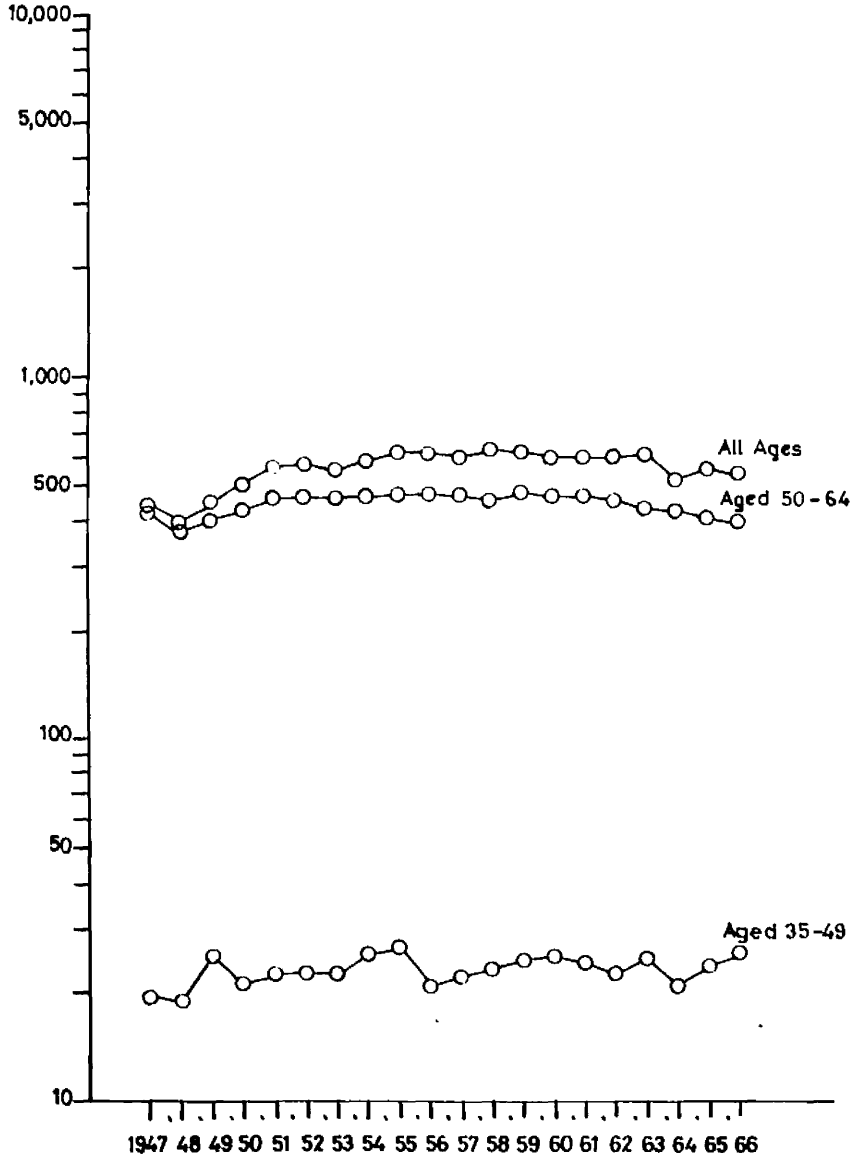


FIGURE 20.

SUBARACHNOID HAEMORRHAGE

I.S.C. 330

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
ENGLAND AND WALES 1950 - 1966.

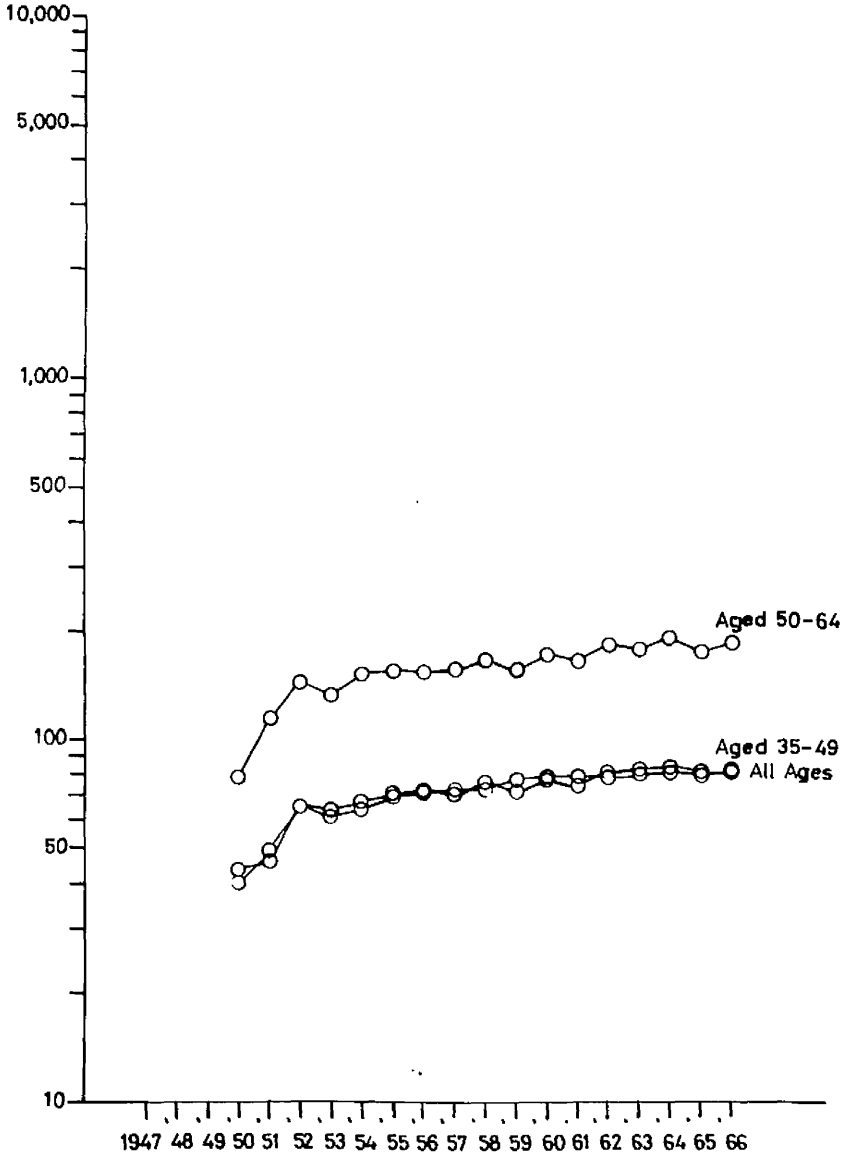


FIGURE 21.

SUBARACHNOID HAEMORRHAGE

I.S.C. 330

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
ENGLAND AND WALES 1950 - 1966.

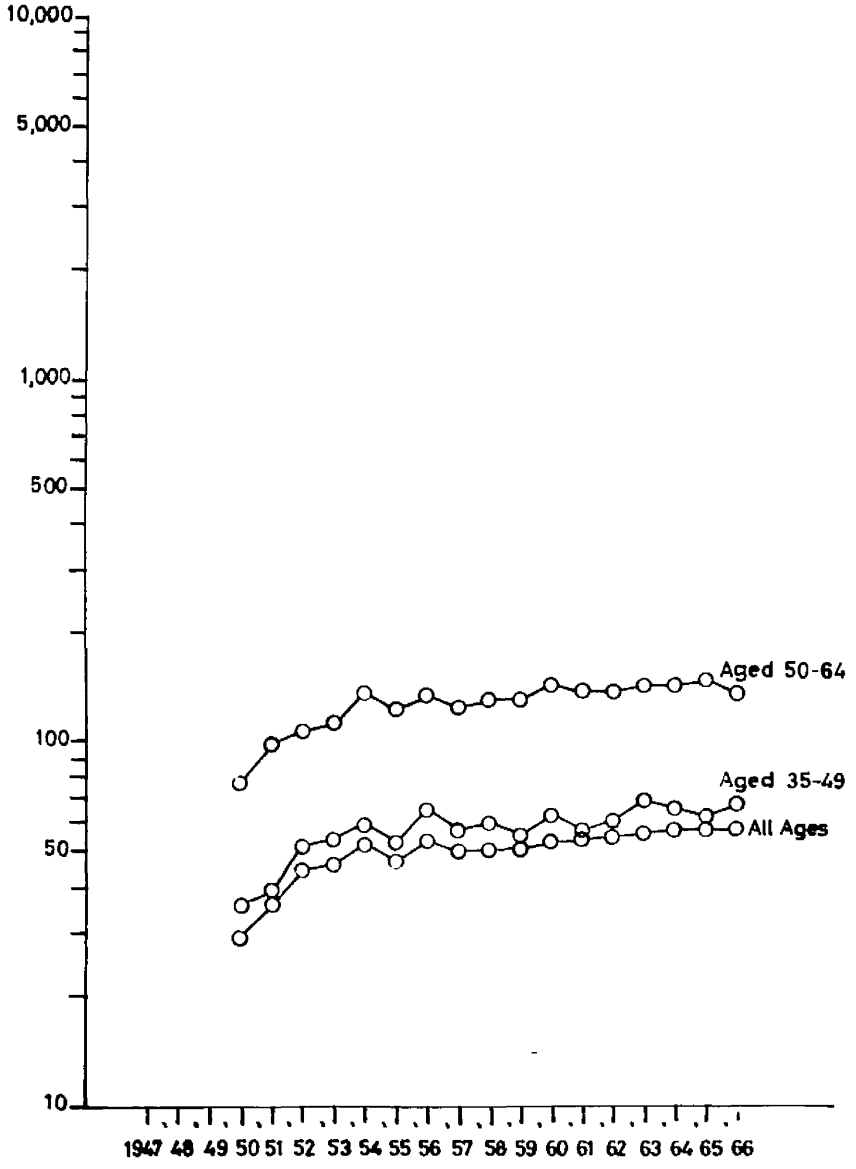


FIGURE 22

CEREBRAL VASCULAR DISEASE

I.S.C. 330 - 334

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
ENGLAND AND WALES 1947 - 1966.

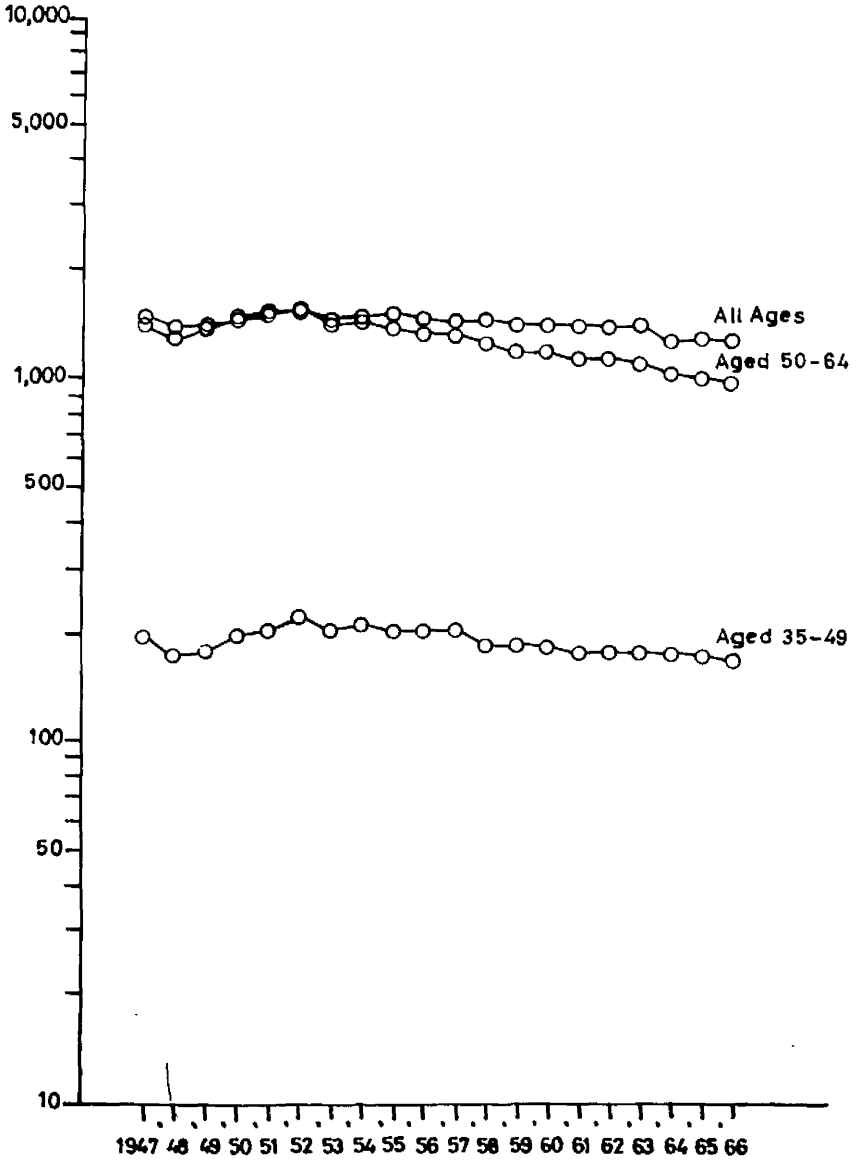


FIGURE 23.

CEREBRAL VASCULAR DISEASE

I.S.C. 330-334

DIRECT STANDARDISED RATES (LOG SCALE)

MALES

(rate - million)

ENGLAND AND WALES 1947 - 1966.

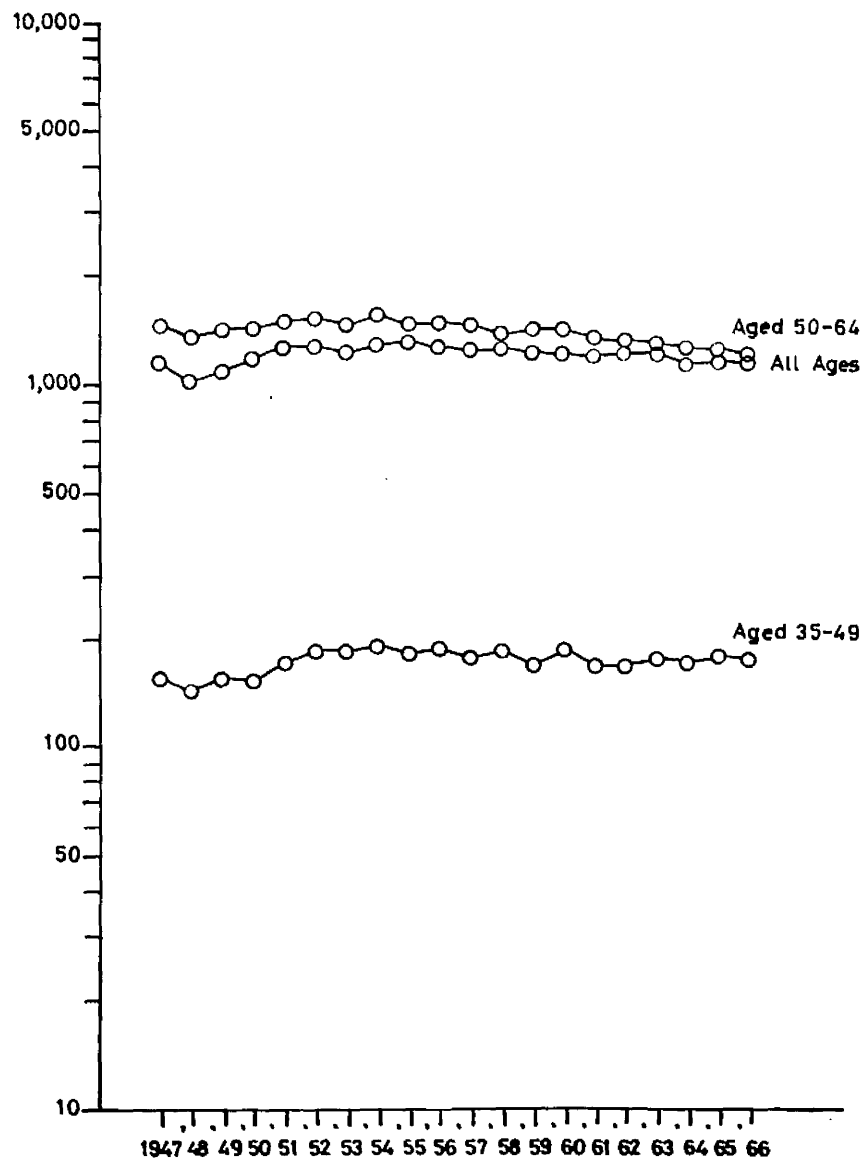


FIGURE 24

ARTERIOSCLEROTIC AND DEGENERATIVE HEART DISEASE

I.S.C. 420-422

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
SCOTLAND 1950-1966.

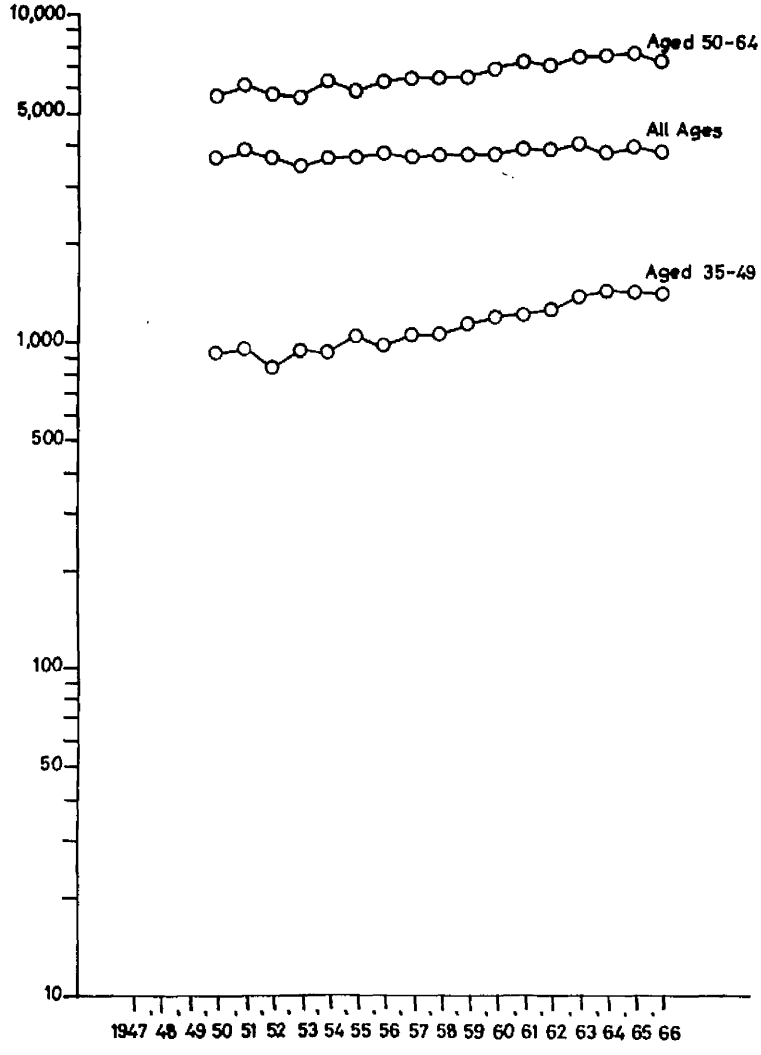


FIGURE 25

ARTERIOSCLEROTIC AND DEGENERATIVE HEART DISEASE

I.S.C. 420-422

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
SCOTLAND 1950-1966.

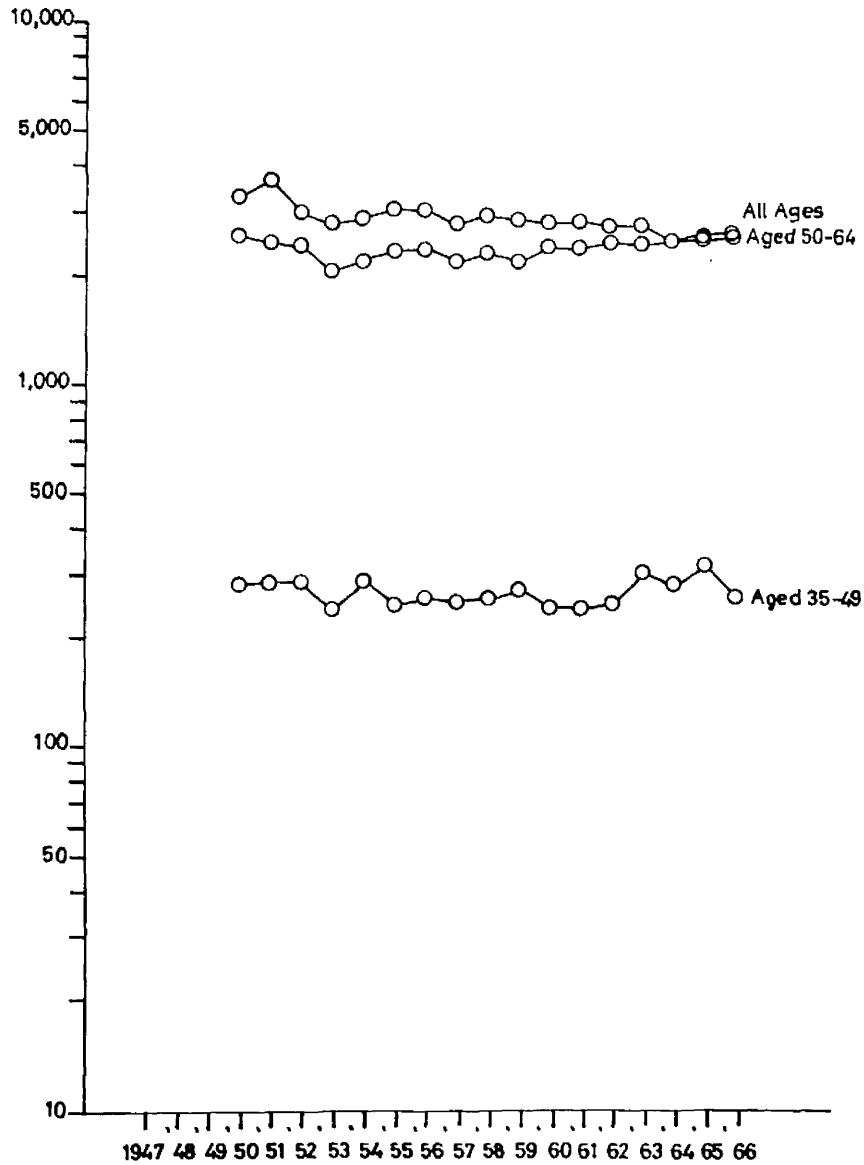


FIGURE 26

ARTERIOSCLEROTIC AND DEGENERATIVE HEART DISEASE

I.S.C. 420-422.

DIRECT STANDARDISED RATES (LOG SCALE)

MALES
(rate - million)
ENGLAND AND WALES 1950 - 1966.

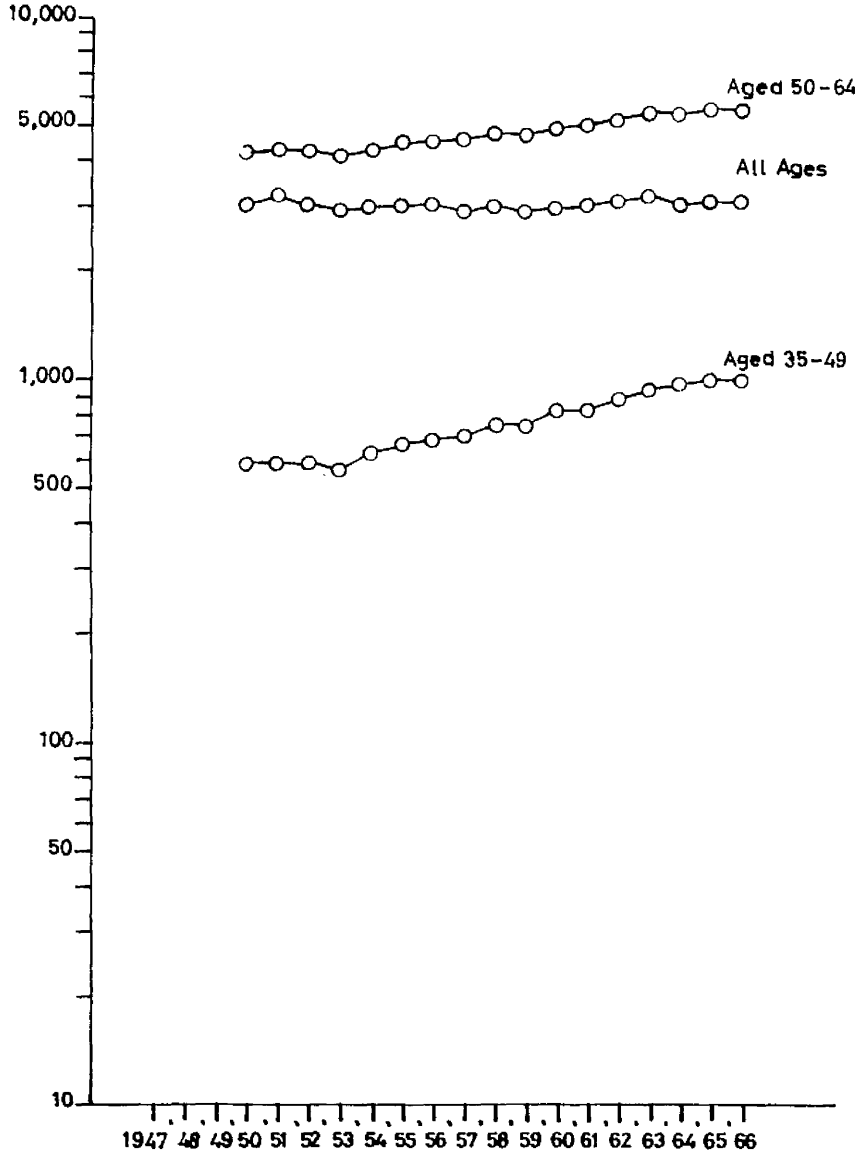


FIGURE 27.

ARTERIOSCLEROTIC AND DEGENERATIVE HEART DISEASE

I.S.C. 420 - 422.

DIRECT STANDARDISED RATES (LOG SCALE)

FEMALES
(rate - million)
ENGLAND AND WALES 1950 - 1966.

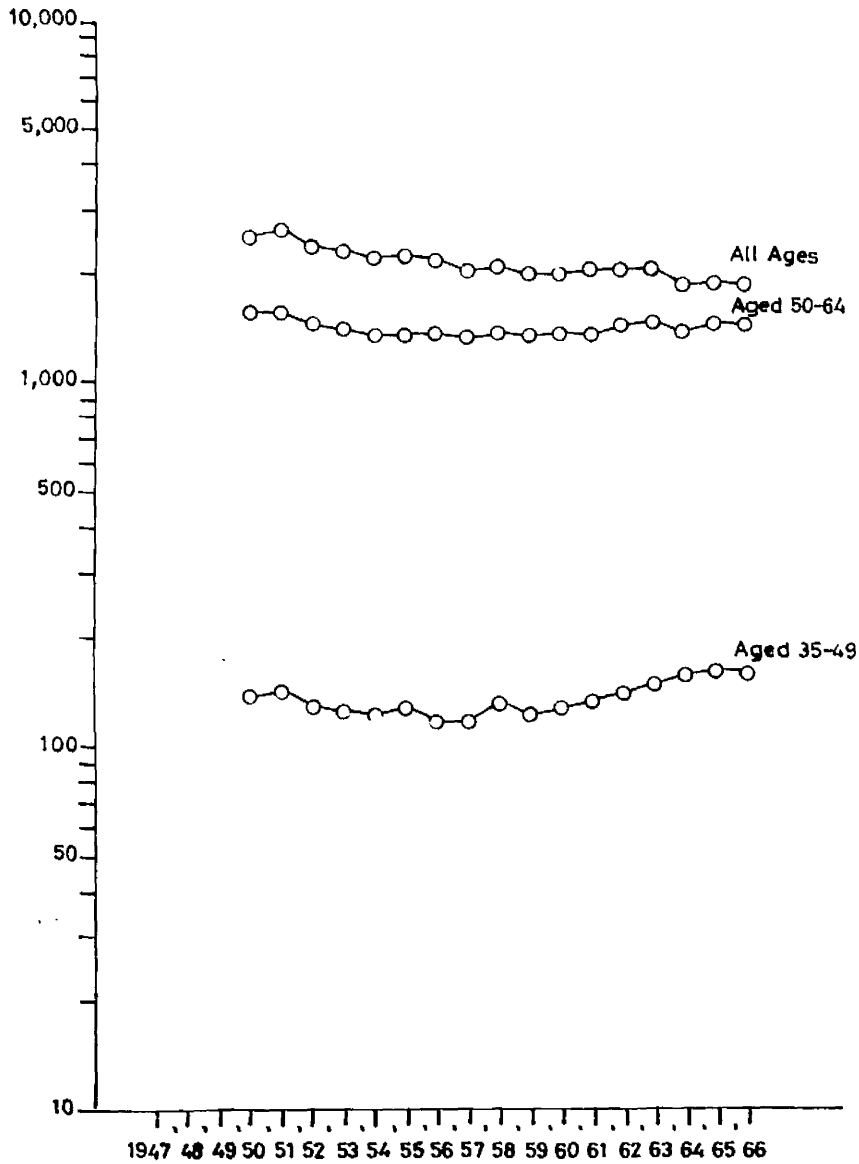
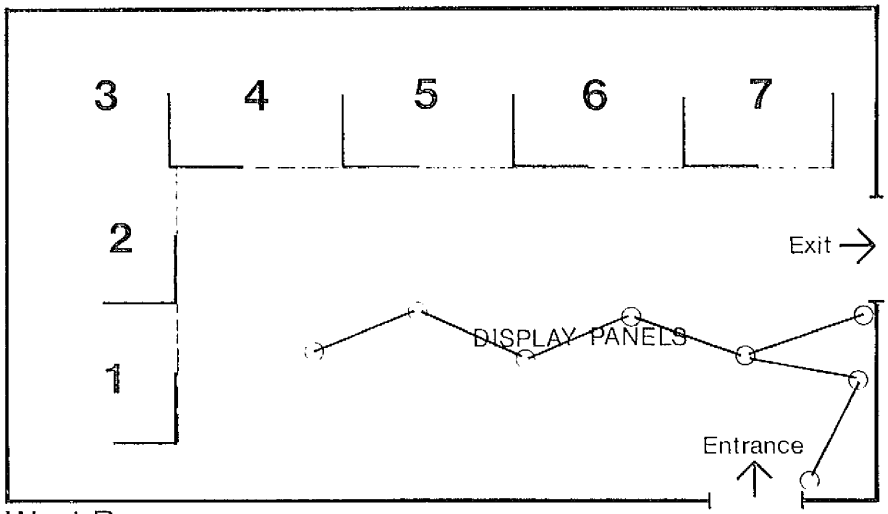


FIGURE 28.



West Room

West Room

1. MMR Documentation. 2. Questionnaire Check. 3. Height and Weight Check. 4. Skin Pinch and Vitalograph. 5. ECG Machine. 6. Blood Pressure. 7. Coders at work on questionnaire.

TABLE 193.

MURDERS EXAMINED IN CLACKMANNAN BY AGE AND SEX.

Age	Male	Female
15-19	14	20
20-29	52	34
30-39	64	20
40-49	114	25
50-59	182	14
60-64	62	4
(65+)	(12)	-
Age Group 15-64	488	117

TABLE 194.

NUMBERS EXAMINED IN GLASGOW BY AGE AND SEX.

Age	Male.	Female.
15-19	32	29
20-29	69	47
30-39	92	41
40-49	99	45
50-59	75	32
60-64	30	1
(65+)	(3)	(1)
Age Group 15-64	397	195

TABLE 195.

NUMBERS EXAMINED ON THE ISLAND OF TIREE BY AGE AND SEX.

Age	Male	Female
15-19	14	19
20-29	27	16
30-39	43	52
40-49	59	53
50-59	36	41
60-64	18	19
(65+)	(50)	(77)
Age Group 15-64	197	200

TABLE 196.

PREVALENCE OF 'TRANSIENT CEREBRAL ISCHAEMIA'

	All Individuals aged 15-64	
	With Symptoms	Without Symptoms
Glasgow	50 (8.4%)	542
Clackmannan	50 (8.3%)	555
Tiree	19 (4.8%)	378

X^2 Glasgow/Tiree = 4.3573 $p < 5\%$

X^2 Clackmannan/Tiree = 3.9974 $p < 5\%$

X^2 Clackmann/Glasgow = N/S

TABLE 197.

NUMBER AND PERCENTAGE OF INDIVIDUALS AGED 15 - 64 WITH SYMPTOMS OF TRANSIENT CEREBRAL ISCHEMIA BY AGE GROUP AND SEX

	Age	Males %	Females %
Glasgow	15-39	12 (6.2)	9 (7.7)
	40-64	24 (11.8)	5 (6.4)
Clackmannan	15-39	8 (6.2)	6 (8.0)
	40-64	30 (8.4)	6 (14.0)
Tiree	15-39	3 (3.6)	1 (1.1)
	40-64	6 (5.3)	9 (8.8)

FIGURE 29.

Distribution of Symptoms

Males and Females aged 15 - 64

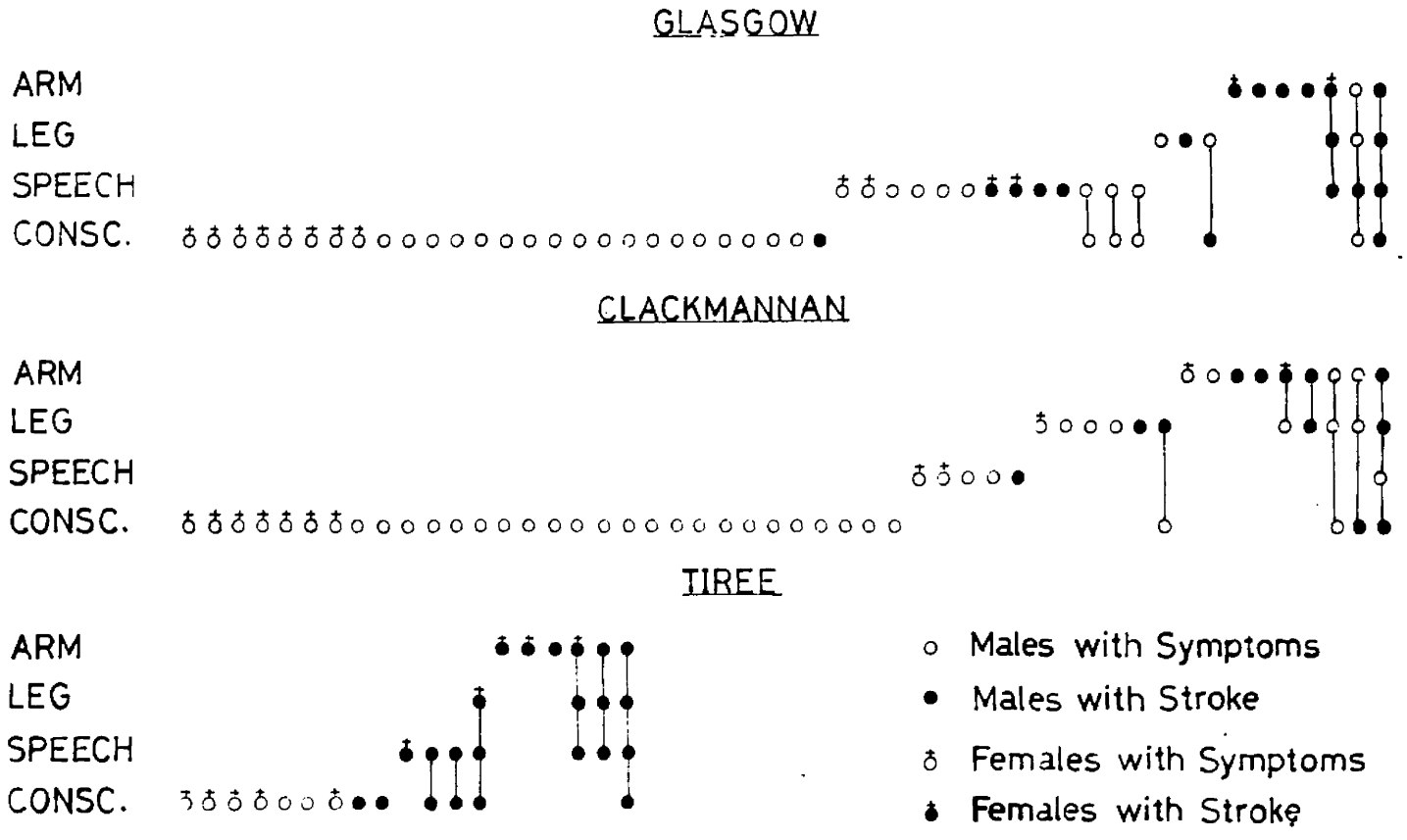


TABLE 198.

FREQUENCY OF SYMPTOMS OF TRANSIENT CEREBRAL ISCHEMIA
BY SURVEY AREA AND SEX

	MALE			FEMALE		
	Glasgow %	Clack-mannan %	Tiree %	Glasgow %	Clack-mannan %	Tiree %
Arm	5(10.9)	7(14.9)	3(20.00)	2(12.5)	2(15.4)	3(20.00)
Leg	5(10.9)	9(19.1)	2(13.33)	1(6.25)	2(15.4)	2(13.33)
Speech	11(23.9)	4(8.5)	4(26.67)	5(31.25)	2(15.4)	3(20.00)
Consc.	25(54.3)	27(57.5)	6(40.00)	8(50.00)	7(55.4)	7(46.67)
	46(100.0)	47(100.0)	15(100.00)	16(100.00)	13(100.0)	15(100.00)

TABLE 199.

RATIO OF FREQUENCY OF STROKE/FREQUENCY OF SYMPTOMS BY SURVEY AREA AND SEX.

	MALES			FEMALES		
	Glasgow	Clack-mannan	Tiree	Glasgow	Clack-mannan	Tiree
Arm	4/5 (80%)	4/77 (57.14%)	3/3 (100%)	2/2 (100%)	1/2 (50%)	3/3 (100%)
Leg	2/5 (40%)	4/9 (44.44%)	2/2 (100%)	1/1 (100%)	0/2 (0%)	2/2 (100%)
Speech	4/11 (36.36%)	1/4 (25%)	4/4 (100%)	3/5 (60%)	0/2 (0%)	3/3 (100%)
Consc.	3/25 (12%)	2/27 (7.41%)	3/6 (50%)	0/8 (0%)	0/7 (0%)	3/7 (42.86%)
All	13/46 (28.26%)	11/47 (23.40%)	12/15 (80%)	6/16 (37.5%)	1/13 (7.69%)	11/15 (73.33%)

TOTAL 54/152 (35.53%)

TABLE 200.

Number (n) Mean ($\bar{x}$) Standard deviations (S) 't' values and significance levels for weight (lbs) in Males aged 15-64 with and without symptoms of 'Transient Cerebral Ischaemia'

	With Symptoms			Without Symptoms			't'	S'ficance
	n	$\bar{x}$	S	n	$\bar{x}$	S		
Glasgow	36	158.2	± 23.47	361	152.6	± 23.46	1.3269	N/S
Clackmannan	38	148.7	± 18.19	450	162.3	± 22.39	- 4.2832	0.1%
Tiree	9	163.4	± 23.75	188	171.7	± 29.08	- 1.2543	N/S

Number (n) Mean ($\bar{x}$) Standard deviations (S) 't' values and significance levels for height (inches) in Males aged 15-64 with a d without symptoms of 'Transient Cerebral Ischaemia'

	With Symptoms			Without Symptoms			't'	S'ficance
	n	$\bar{x}$	S	n	$\bar{x}$	S		
Glasgow	36	67.35	± 2.85	361	66.91	± 2.70	0.8626	N/S
Clackmannan	38	67.22	± 2.84	450	67.81	± 2.73	- 1.2173	N/S
Tiree	9	68.86	± 2.18	188	68.34	± 5.08	0.7786	N/S

TABLE 201(a)

EXPERIENCE OF SYMPTOMS OF ANGINA
IN MALES AGED 15 - 64 IN TOTAL SAMPLE

	With Angina	Without Angina
Glasgow	50 (12.59%)	347
Clackmannan	67 (12.07%)	421
Tiree	17 (8.5%)	181

X^2 Glasgow/Tiree = 1.7422 N/S

X^2 Clackmannan/Tiree = 3.0058 $p < 10\%$

TABLE 201(b)

EXPERIENCE OF SYMPTOMS OF ANGINA
IN MALES AGED 15-64 WITH SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'
AND WITHOUT SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'

	With Symptoms			Without Symptoms	
	With Angina	Without Angina	X^2 With/Without	With Angina	Without Angina
Glasgow	6 (16.7%)	30	0.2589 N/S	44 (12.2%)	317
Clackmannan	7 (17.9%)	32	0.3087 N/S	60 (13.4%)	389
Tiree	4 (44.4%)	5	11.0312p<0.1%	13 (6.9%)	176
All	17 (20.2%)	67	4.4389p<5%	117 (11.7%)	882

TABLE 202(a)

EXPERIENCE OF SYMPTOMS OF INFARCTION
IN MALES AGED 15-64 IN TOTAL SAMPLE.

	With Infarction	Without Infarction
Glasgow	23 (5.9%)	364
Clackmannan	38 (7.8%)	450
Tiree	9 (4.5%)	189

X^2 Glasgow/Tiree = 0.2615 N/S

X^2 Clackmannan/Tiree = 1.8388 N/S

TABLE 202(b)

EXPERIENCE OF SYMPTOMS OF INFARCTION
IN MALES AGED 15-64 WITH SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'
AND WITHOUT SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'

	With Symptoms			Without Symptoms	
	With Infarction	Without Infarction	X^2 With/Without	With Infarction	Without Infarction
Glasgow	4 (11.1%)	32	1.1196 N/S	19 (5.3%)	342
Clackmannan	7 (17.9%)	32	4.6546 $p<5\%$	31 (6.9%)	418
Tiree	3 (33.3%)	6	1117298 $p<0.1\%$	6 (3.2%)	183
All	14 (16.7%)	70	0.2615 N/S	56 (5.6%)	943

TABLE 203(a)

EXPERIENCE OF SYMPTOMS OF CLAUDICATION
IN MALES AGED 15-64 IN TOTAL SAMPLE.

	With Claudication	Without Claudication
Glasgow	9 (2.2%)	388
Clackmannan	13 (2.7%)	475
Tiree	3 (1.5%)	195

X^2 Glasgow/Tiree = 0.0932 N/S

X^2 Clackmannan/Tiree = 0.3896 N/S

TABLE 203(b)

EXPERIENCE OF SYMPTOMS OF CLAUDICATION
IN MALES AGED 15-64 WITH SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'
AND WITHOUT SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHEMIA'

	With Symptoms			Without Symptoms	
	With Claudication	Without Claudication	X^2 With/Without	With Claudication	Without Claudication
Glasgow	2 (5.5%)	34	0.6448 N/S	17 (1.9%)	354
Clackmannan	3 (7.7%)	36	2.2943 N/S	10 (2.2%)	439
Tiree	0 (0.0%)	9	1.0315 N/S	3 (1.6%)	186
All	5 (6.0%)	79	3.7533p <10%	20 (2.0%)	979

TABLE 204(a)

EXPERIENCE OF SIGNS OF E.C.G. II
IN MALES AGED 15-64 IN TOTAL SAMPLE

	With E.C.G. II	Without E.C.G. II
Glasgow	21 (5.3%)	376
Clackmannan	30 (6.1%)	458
Tiree	11 (5.6%)	187

X^2 Glasgow/Tiree = 0.0033 N/S

X^2 Clackmannan/Tiree = 0.0141 N/S

TABLE 204(b)

EXPERIENCE OF SIGNS OF E.C.G. II
IN MALES AGED 15-64 WITH SIGNS OF 'TRANSIENT CEREBRAL ISCHEMIA'
AND WITHOUT SIGNS OF 'TRANSIENT CEREBRAL ISCHEMIA'

	With signs			Without signs	
	With E.C.G. II	Without E.C.G. II	X^2 With/Without	With E.C.G. II	Without E.C.G.II
Glasgow	3 (8.3%)	33	0.2164 N/S	18 (5.0%)	343
Clackmannan	4 (10.3%)	35	0.5871 N/S	26 (5.8%)	423
Tiree	1 (11.1%)	8	0.0000 N/S	10 (5.3%)	179
All	8 (9.5%)	76	1.7318 N/S	54 (5.4%)	945

TABLE 205 (a)

EXPERIENCE OF SIGNS OF E.C.G. III
IN MALES AGED 15-64 IN TOTAL SAMPLE

	With E.C.G. III	Without E.C.G. III
Glasgow	71 (17.9%)	326
Clackmannan	76 (15.6%)	412
Tiree	53 (26.8%)	145

X^2 Glasgow/Tiree = 5.7928 $p < 2.5\%$

X^2 Clackmannan/Tiree = 10.8377 $p < 0.1\%$

TABLE?205(b)

EXPERIENCE OF SIGNS OF E.C.G. III
IN MALES AGED 15-64 WITH SIGNS OF 'TRANSIENT CEREBRAL ISCHEMIA'
AND WITHOUT SIGNS OF 'TRANSIENT CEREBRAL ISCHEMIA'

	With sigms			Without signs	
	With E%C.G.III	Without E.C.G. III	X^2 With/Without	With E.C.G. III	Without E.C.G. III
Glasgow	6 (16.7%)	30	0.0008 N/S	65 (18.0%)	296
Clackmannan	10 (25.6%)	29	2.4881 N/S	66 (14.7%)	383
Tiree	4 (44.4%)	5	0.7067 N/S	49 (25.9%)	140
All	20 (23.8%)	64	1.3629 N/S	80 (18.0%)	819

FIGURE 30.

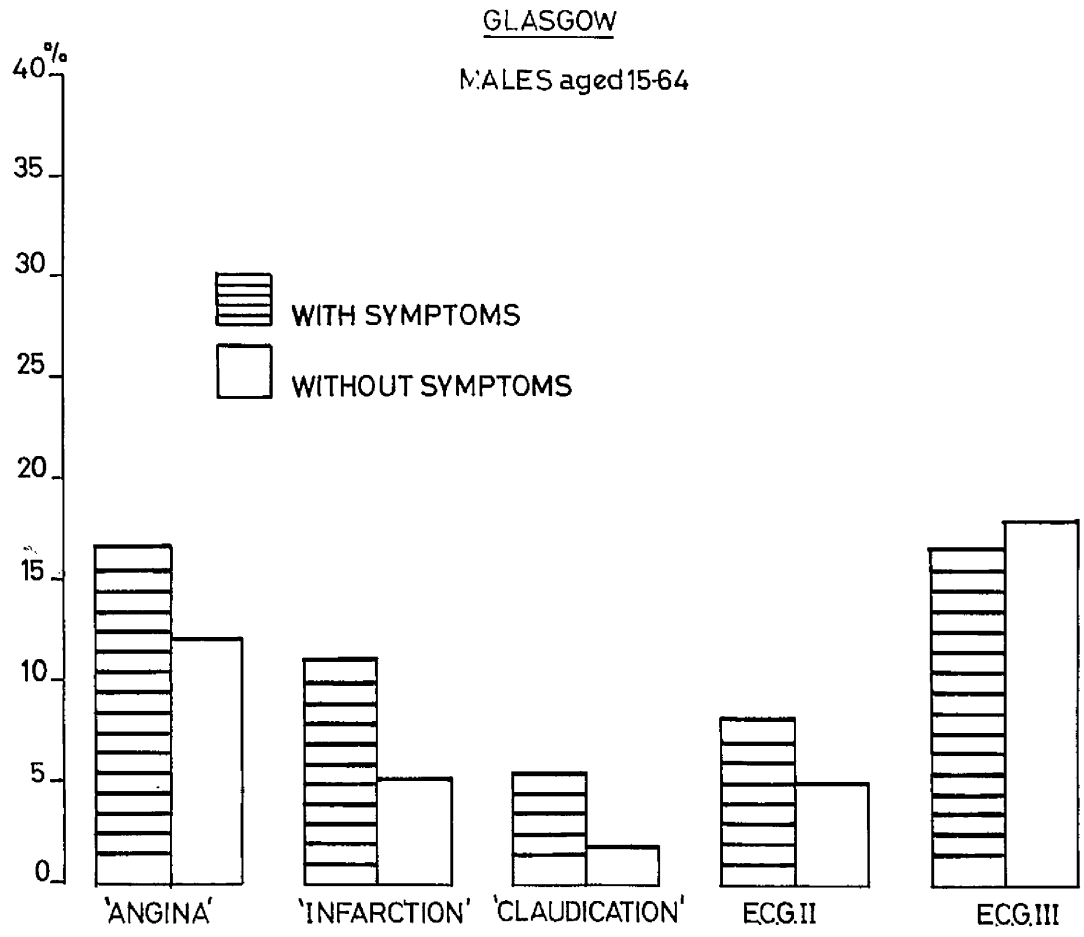

GLASGOW
MALES aged 15-64
%
40
35
30
25
20
15
10
5
0
WITH SYMPTOMS
WITHOUT SYMPTOMS
'ANGINA'
'INFARCTION'
'CLAUDICATION'
E.C.G. II
E.C.G. III

FIGURE 31.

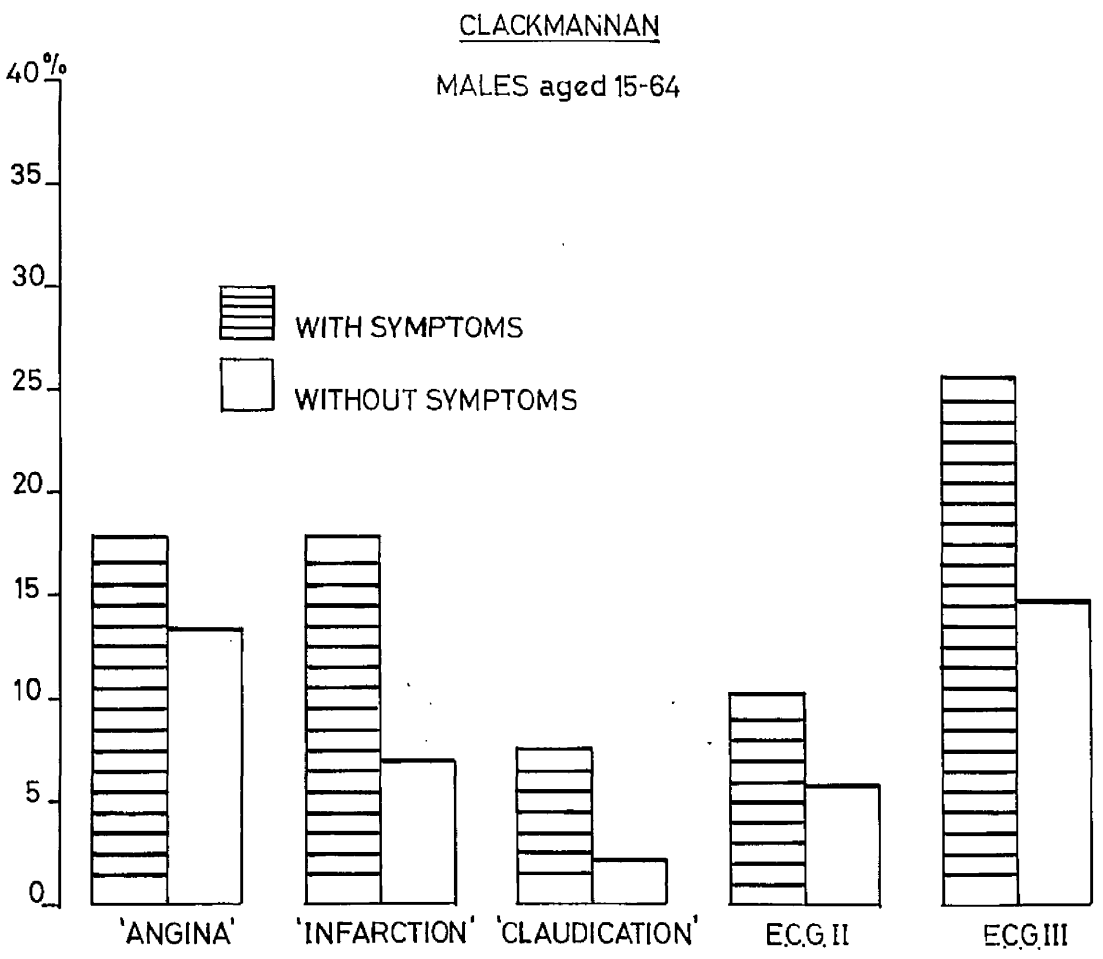

CLACKMANNAN
MALES aged 15-64
40%
35
30
25
20
15
10
5
0
WITH SYMPTOMS
WITHOUT SYMPTOMS
'ANGINA'
'INFARCTION'
'CLAUDICATION'
E.C.G. II
E.C.G. III

FIGURE 32


TIREE
MALES aged 15-64
45 %
40
35
30
25
20
15
10
5
0
WITH SYMPTOMS
WITHOUT SYMPTOMS
'ANGINA'
'INFARCTION'
'CLAUDICATION'
ECG II
ECG III

FIGURE 33

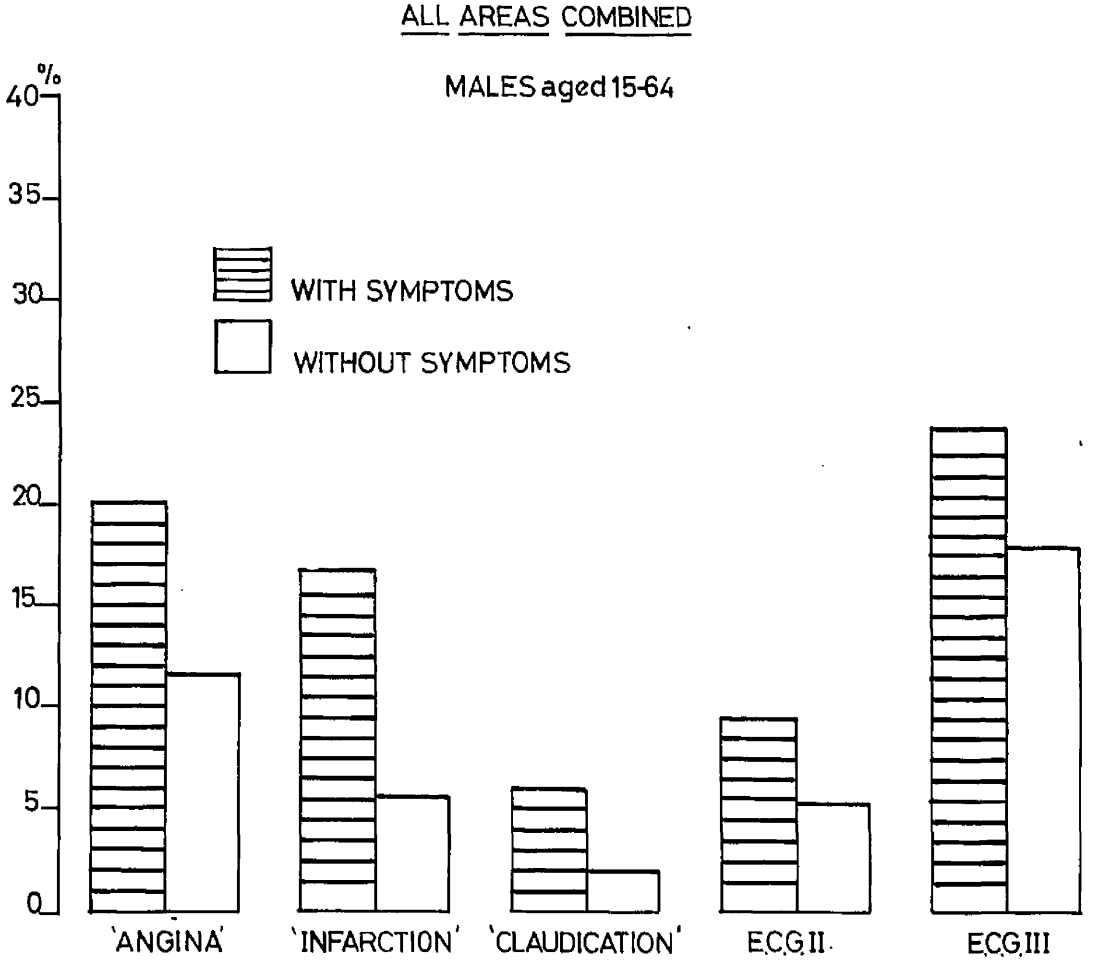

ALL AREAS COMBINED
MALES aged 15-64
%
40
35
30
25
20
15
10
5
0
WITH SYMPTOMS
WITHOUT SYMPTOMS
'ANGINA'
'INFARCTION'
'CLAUDICATION'
E.C.G. II
E.C.G. III

TABLE 206(a)

EXPERIENCE OF CIGARETTE SMOKING
IN MALES AGED 15-64 IN TOTAL SAMPLE

	Smokers	Non-Smokers
Glasgow	280 (70.5%)	117
Clackmannan	329 (67.4%)	159
Tiree	134 (67.7%)	64

X^2 Glasgow/Tiree = 0.3819 N/S

X^2 Clackmannan/Tiree = 0.9962 N/S

TABLE 206(b)

EXPERIENCE OF CIGARETTE SMOKING
IN MALES AGED 15-64 WITH SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHAEMIA'
AND WITHOUT SYMPTOMS OF 'TRANSIENT CEREBRAL ISCHAEMIA'

	With Symptoms			Without Symptoms	
	Smokers	Non-Smokers	X^2 With/Without	Smokers	Non-Smokers
Glasgow	25 (69.4%)	11	0.0039 N/S	255 (70.6%)	106
Clackmannan	29 (74.4%)	10	0.6179 N/S	300 (66.8%)	149
Tiree	7 (77.8%)	2	0.0891 N/S	127 (67.2%)	62
All	61 (72.6%)	23	0.4940 N/S	682 (68.3%)	317

TABLE 207.

Numbers, mean, systolic and diastolic blood pressure levels (S.B.P. and D.B.P.) standard deviations, 't' values, degrees of freedom, significance levels for males aged 40-64 with symptoms of transient cerebral ischemia and without symptoms of transient cerebral ischemia for Glasgow, Clackmannan and Tiree.

		WITH SYMPTOMS			WITHOUT SYMPTOMS					
Area		No.	Mean	Stand. Dev.	No.	Mean	Stand. Dev.	't'	D.F.	S'ficance.
Glasgow	DBP (mm Hg)	24	83.083	14.512	178	78.730	12.620	1.558	200	10%
	SBP "	24	146.917	22.857	178	136.567	18.946	2.449	200	1%
Clackmannan	DBP "	30	84.806	11.137	320	77.444	26.926	1.508	349	10%
	SBP "	30	138.065	19.780	320	125.188	42.606	1.664	349	5%
Tiree	DBP "	6	93.250	17.576	110	87.082	15.338	0.787	112	NS
	SBP "	6	142.500	28.908	110	152.891	28.826	0.708	112	(-) NS

FIGURE 34.

Survey Areas, Numbers Examined, Survey Response.

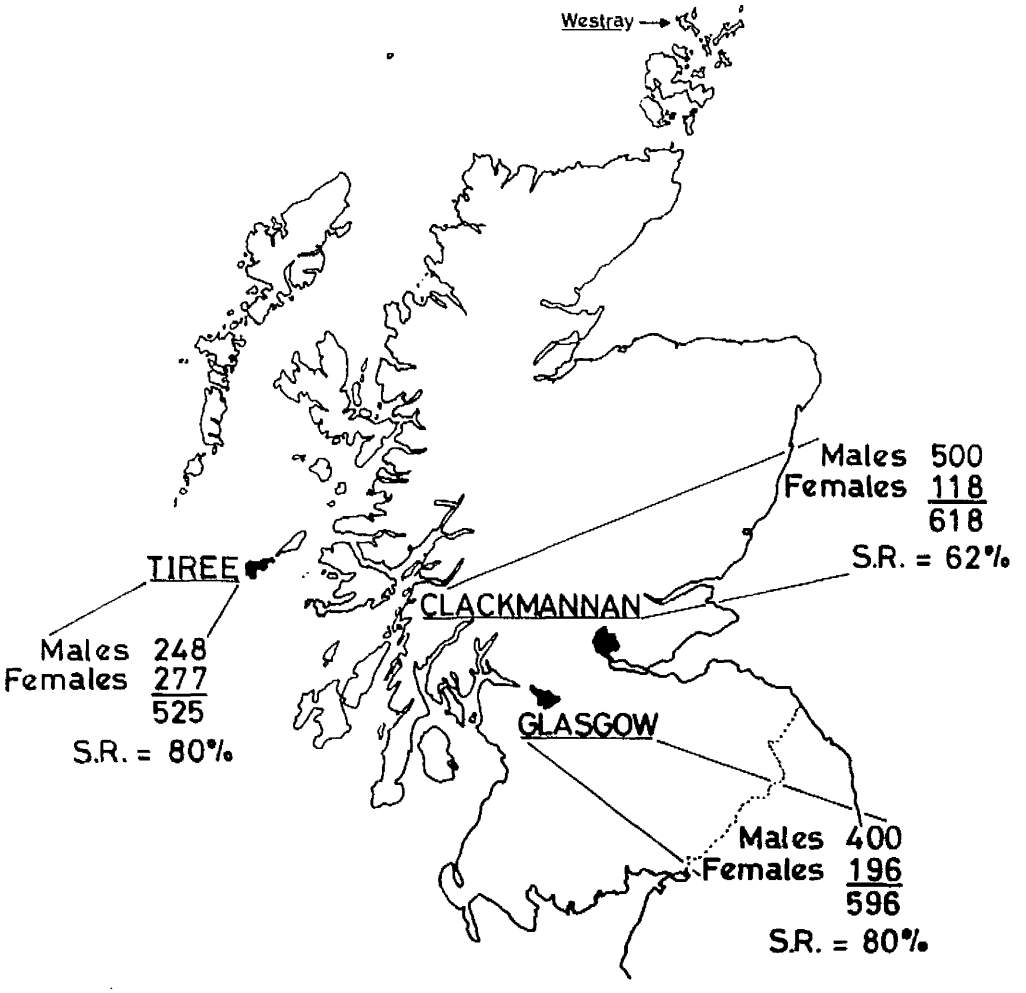


FIGURE 35.

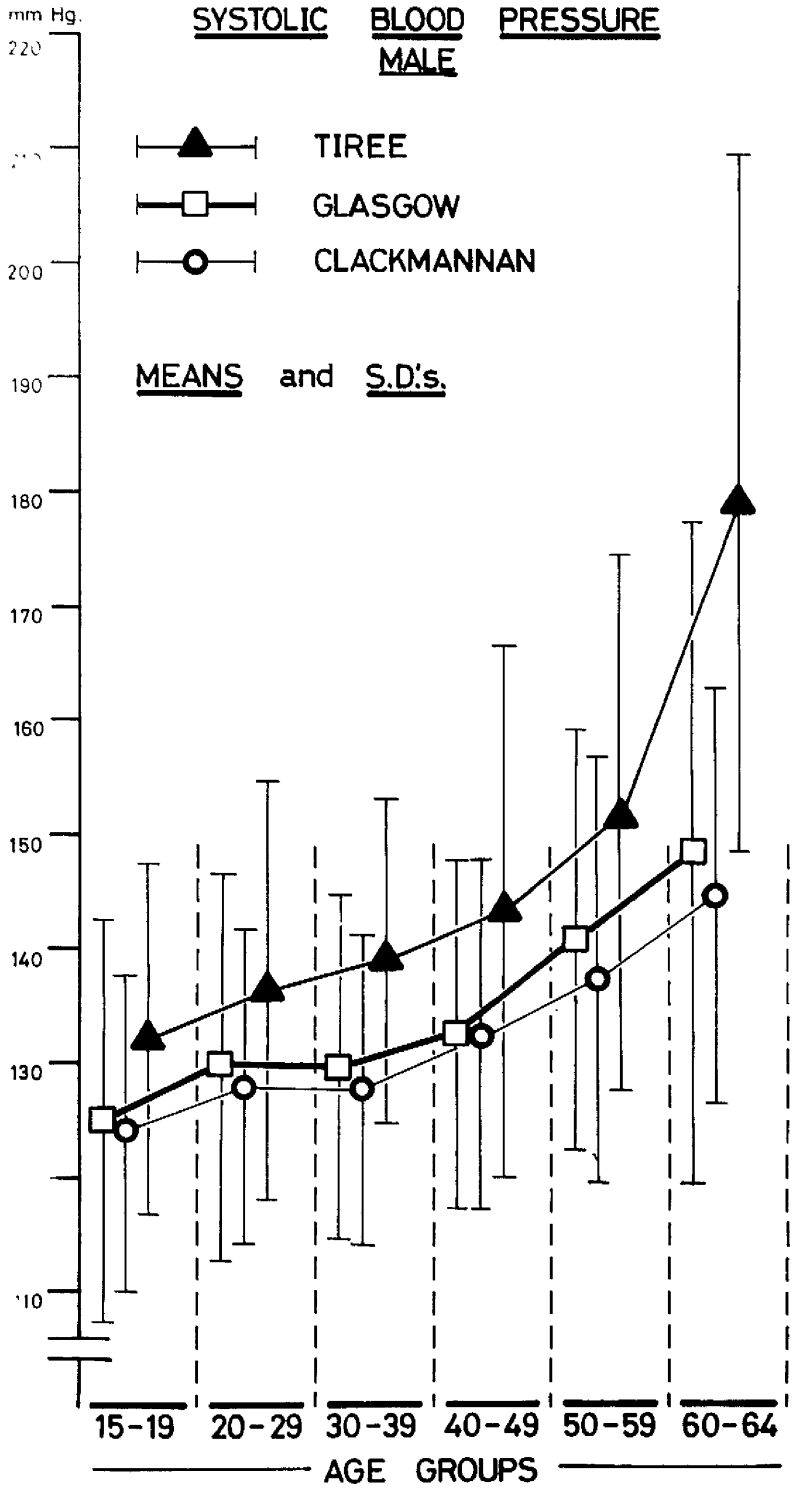

mm Hg.
SYSTOLIC BLOOD PRESSURE
MALE
TIREE
GLASGOW
CLACKMANNAN
MEANS and S.D.'s.
220
200
190
180
170
160
150
140
130
110
15-19
20-29
30-39
40-49
50-59
60-64
AGE GROUPS

FIGURE 36.

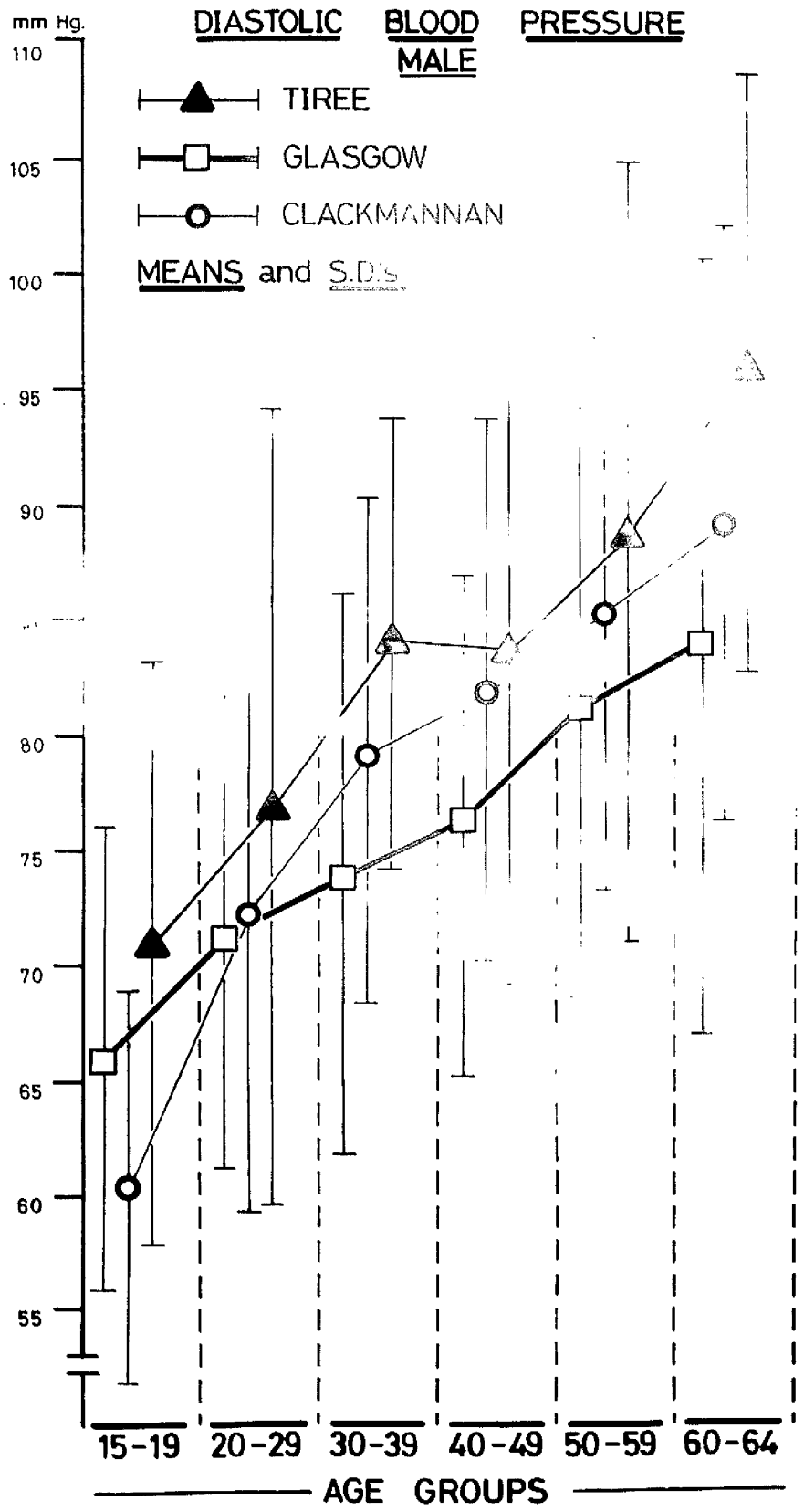

mm Hg.
DIASTOLIC BLOOD PRESSURE
MALE
TIREE
GLASGOW
CLACKMANNAN
MEANS and S.D's
110
105
100
95
90
80
75
70
65
60
55
15-19
20-29
30-39
40-49
50-59
60-64
AGE GROUPS

FIGURE 37.

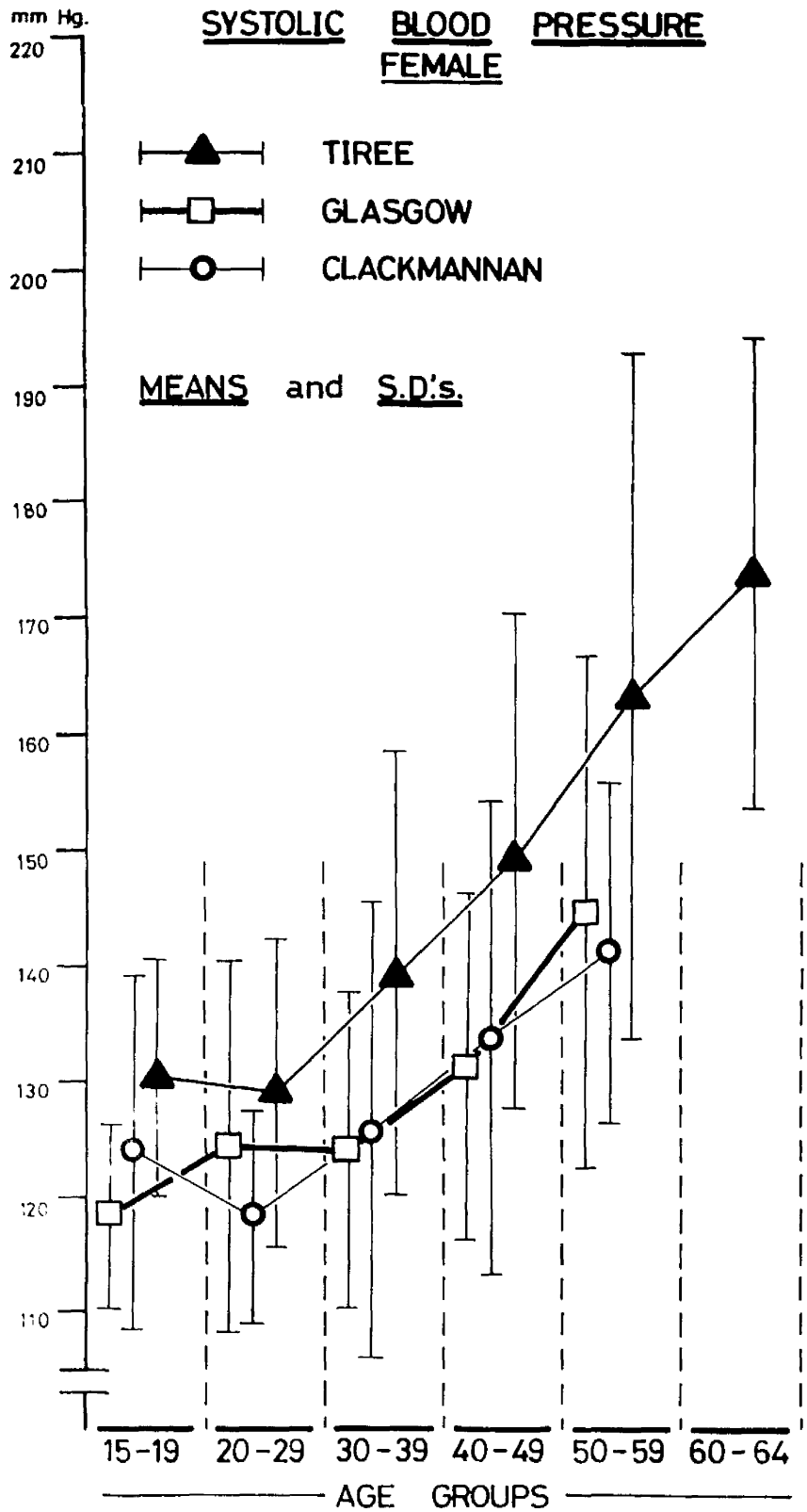

mm Hg.
SYSTOLIC BLOOD PRESSURE
FEMALE
TIREE
GLASGOW
CLACKMANNAN
MEANS and S.D's.
220
210
200
190
180
170
160
150
140
130
120
110
15-19
20-29
30-39
40-49
50-59
60-64
AGE GROUPS

FIGURE 38.

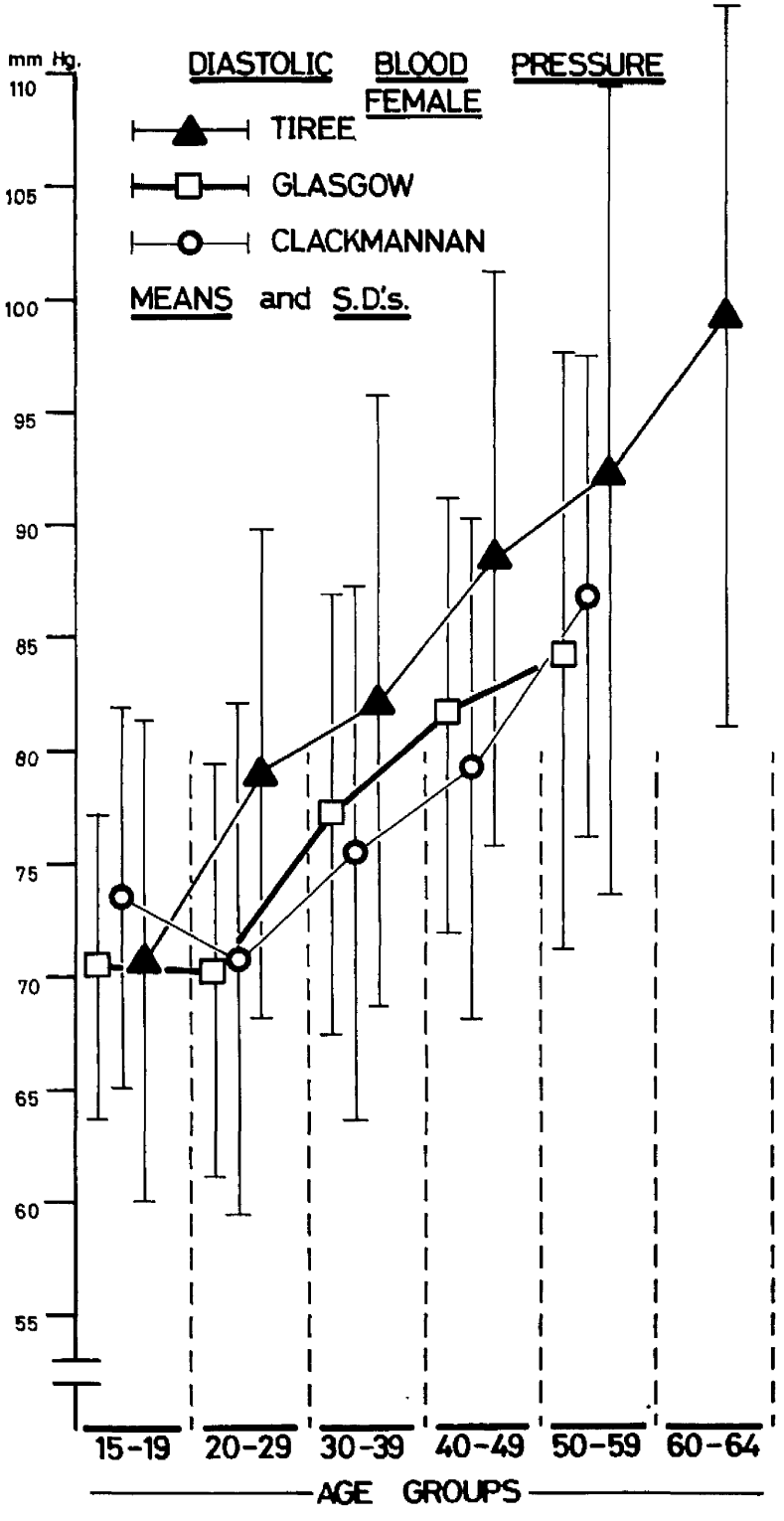

mm Hg.
DIASTOLIC BLOOD PRESSURE
FEMALE
TIREE
GLASGOW
CLACKMANNAN
MEANS and S.D's.
110
105
100
95
90
85
80
75
70
65
60
55
15-19
20-29
30-39
40-49
50-59
60-64
AGE GROUPS

TABLE IVa

MEANS AND STANDARD DEVIATIONS FOR SYSTOLIC AND DIASTOLIC BLOOD PRESSURE (mm.Hg) IN MALES BY AGE AND AREA

Age	Tiree		Clackmannan		Glasgow	
	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
15-19	132.1 ± 15.2	70.6 ± 12.7	124.0 ± 13.6	60.4 ± 8.5	124.8 ± 17.5	65.9 ± 10.1
20-29	136.2 ± 18.1	76.9 ± 17.3	127.9 ± 13.5	72.4 ± 13.0	129.6 ± 16.7	71.4 ± 10.2
30-39	138.8 ± 14.3	84.1 ± 9.9	127.6 ± 13.5	79.2 ± 10.9	129.6 ± 15.1	73.9 ± 12.1
40-49	143.2 ± 23.3	83.7 ± 14.3	132.1 ± 15.6	81.9 ± 11.7	132.3 ± 15.0	76.2 ± 10.8
50-59	151.3 ± 23.5	88.6 ± 16.5	138.3 ± 18.5	85.3 ± 12.1	140.8 ± 18.4	81.4 ± 12.8
60-64	179.2 ± 30.6	96.0 ± 13.2	144.5 ± 18.3	89.2 ± 13.0	148.4 ± 28.9	84.0 ± 16.8
65+	175.2 ± 27.5	94.3 ± 16.1	139.5 ± 14.8	84.3 ± 8.4	130.0	81.0
15-64	145.4 ± 24.4	93.0 ± 15.2	134.7 ± 17.5	82.1 ± 13.3	133.4 ± 18.6	75.5 ± 12.8

TABLE IVb

MEANS AND STANDARD DEVIATIONS FOR SYSTOLIC AND DIASTOLIC BLOOD PRESSURE (mm.Hg) IN FEMALES BY AGE AND AREA

Age	Tiree		Clackmannan		Glasgow	
	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
15-19	130.4 ± 10.2	70.8 ± 10.6	124.0 ± 15.3	73.5 ± 8.3	118.2 ± 8.1	70.5 ± 6.7
20-29	129.1 ± 13.3	79.0 ± 10.7	118.3 ± 9.2	70.8 ± 11.3	124.3 ± 16.0	70.4 ± 9.1
30-39	139.4 ± 19.2	82.2 ± 13.4	125.9 ± 19.9	75.4 ± 11.8	124.0 ± 13.8	77.1 ± 9.6
40-49	149.1 ± 21.2	88.5 ± 12.6	133.8 ± 20.3	79.3 ± 11.1	131.2 ± 15.0	81.6 ± 9.6
50-59	163.3 ± 29.4	92.3 ± 18.7	141.1 ± 14.7	86.9 ± 10.6	144.7 ± 22.1	84.4 ± 13.2
60-64	174.1 ± 20.2	99.3 ± 17.9	137.5 ± 26.3	88.8 ± 2.5	120.0	60.0
65+	183.3 ± 23.4	101.2 ± 16.7	...	...	180.0	80.0
15-64	148.5 ± 25.3	86.3 ± 16.2	127.1 ± 17.7	76.3 ± 11.8	128.3 ± 17.6	76.7 ± 11.2

TABLE V

t-VALUES AND LEVELS OF SIGNIFICANCE FOR SYSTOLIC AND DIASTOLIC BLOOD PRESSURE

FOR MALES AND FEMALES BETWEEN THE THREE SAMPLES

Age Group	SYSTOLIC PRESSURE				DIASTOLIC PRESSURE			
	GLASGOW AND CLACKMANNAN							
	MALES		FEMALES		MALES		FEMALES	
	t-Value	Significance	T-Value	Significance	t-Value	Significance	t-Value	Significance
15-19	0.16	N/S.	1.55	N/S.	1	10%	1.33	N/S.
20-29	0.64	N/S.	2.13	5%	0.43	N/S.	0.18	N/S.
30-39	0.84	N/S.	0.38	N/S.	2.89	0.5%	0.56	N/S.
40-49	0.10	N/S.	0.54	N/S.	3.72	0.1%	0.87	N/S.
50-59	0.98	N/S.	0.65	N/S.	2.25	5%	0.67	N/S.
60-64	0.68	N/S.	...	...	1.50	N/S.	...	...
65+	...	...	...	...	0.55	N/S.	...	...
15-64	1.04	N/S.	0.54	N/S.	7.42	0.1%	0.24	N/S.
	CLACKMANNAN AND TIREE							
15-19	1.49	N/S.	1.55	N/S.	2.48	2.5%	0.88	N/S.
20-29	2.10	5%	2.96	1%	1.18	N/S.	2.49	2%
30-39	4.0	0.1%	2.56	2%	2.39	2%	2.0	5%
40-49	3.29	0.2%	3.01	0.5%	0.81	N/S.	3.22	0.5%
50-59	3.10	0.5%	3.68	0.1%	1.12	N/S.	1.33	N/S.
60-64	4.68	0.1%	2.62	10%	1.97	10%	2.45	2.5%
65+	6.08	0.1%	...	...	2.99	1%	...	...
15-64	6.07	0.1%	8.76	0.1%	1.52	N/S.	6.24	0.1%
	GLASGOW AND TIREE							
15-19	1.44	N/S.	4.38	0.1%	1.22	N/S.	0.10	N/S.
20-29	1.63	N/S.	1.20	N/S.	1.53	N/S.	2.88	1%
30-39	3.42	0.1%	4.50	0.1%	5.21	0.1%	2.11	5%
40-49	3.21	0.2%	4.83	0.1%	3.50	0.1%	3.05	0.5%
50-59	2.34	2.5%	3.09	0.5%	2.30	5%	2.12	5%
60-64	3.50	0.2%	...	...	2.79	1%	...	...
65+	...	...	...	...	2.21	N/S.	...	...
15-64	5.59	0.1%	9.21	0.1%	6.71	0.1%	6.83	0.1%

N/S. = not significant

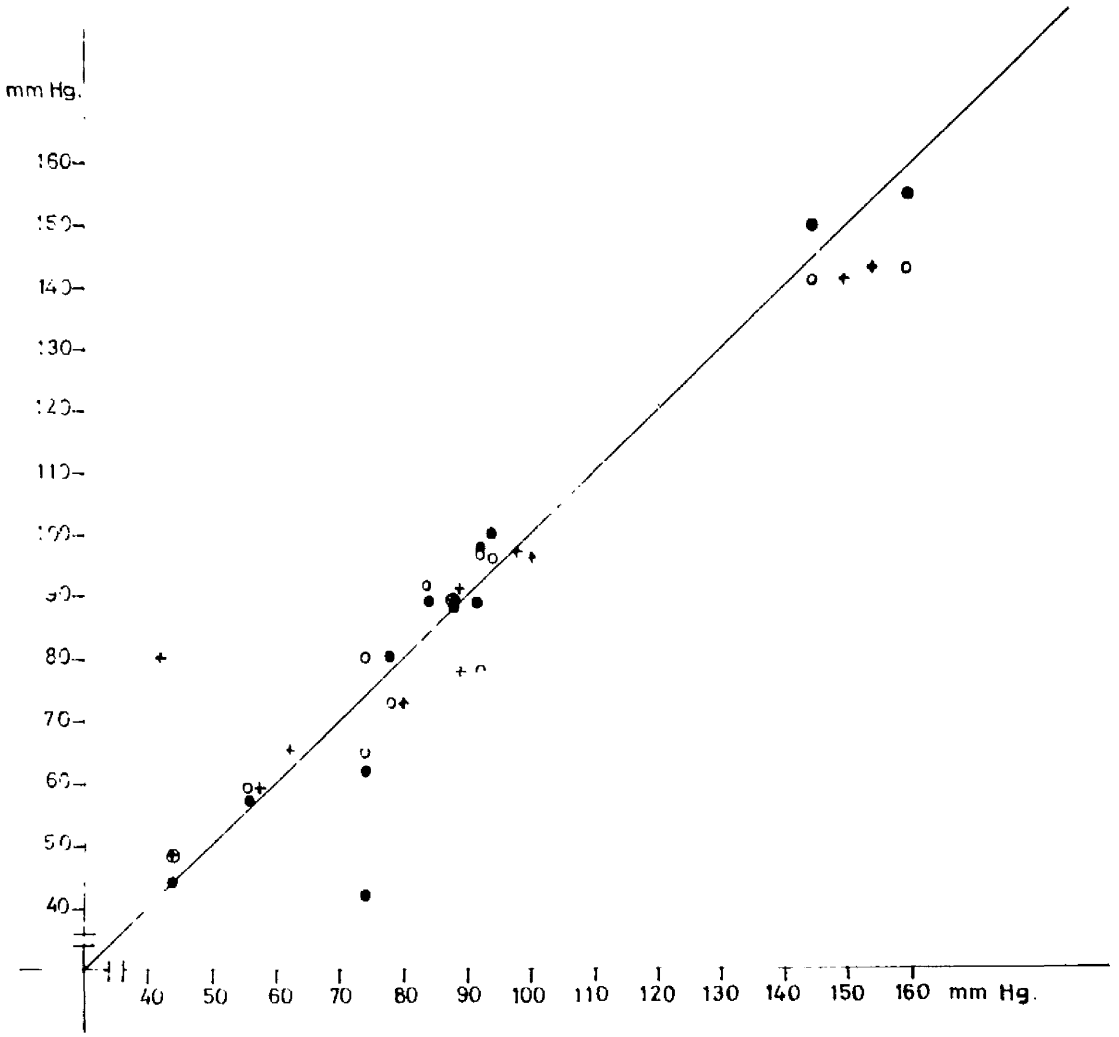
TABLE 211.

BLOOD PRESSURE (mm. Hg.) BY AGE IN MALES OF THE SCOTTISH, ENGLISH, AND AMERICAN SAMPLES.

	Age 40 - 49 years.					Age 50 - 59 years				
	Tiree	Glasgow	Clackmannan	U.K.	U.S.A.	Tiree	Glasgow	Clackmannan	U.K.	U.S.A.
No.	59	98	113	380	396	36	74	176	296	229
Systolic mean	143.2	132.3	132.1	127.4	123.9	151.3	140.8	138.3	130.3	135.3
Standard deviation	23.3	15.0	15.6	18.2	17.6	23.5	18.4	18.5	19.4	20.5
Diastolic mean	83.7	76.2	81.9	78.7	77.4	88.6	81.4	85.3	78.3	80.2
Standard deviation	14.3	10.8	11.7	12.6	11.6	16.5	12.8	12.0	11.1	12.6

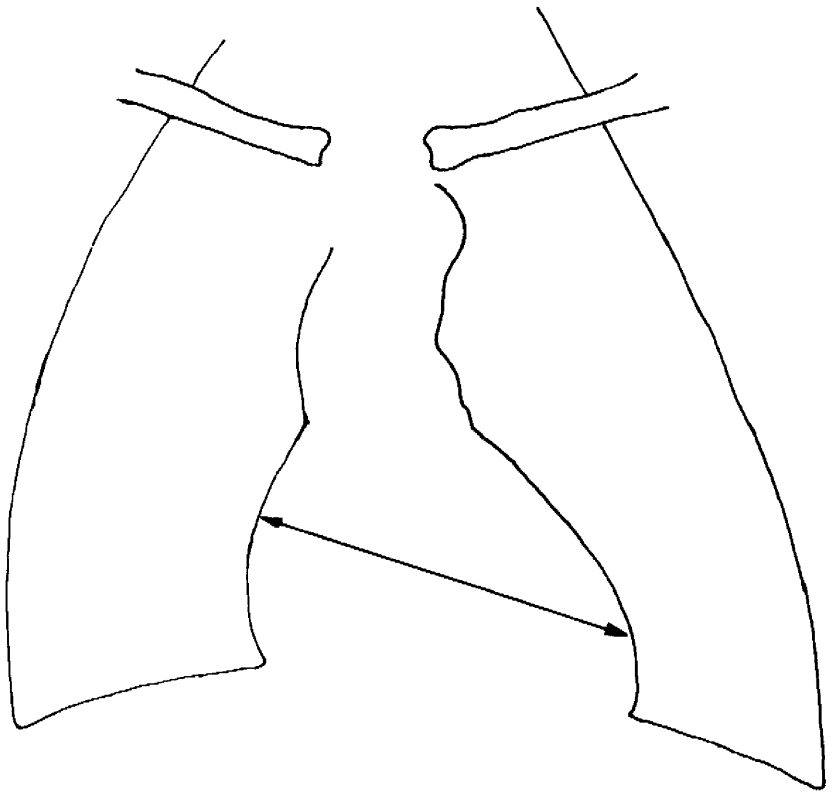
FIGURE 40.

TRIAL OF BLOOD PRESSURE ESTIMATION
DIASTOLIC BLOOD PRESSURE



Vertical Scale	Horizontal Scale
V.M.H. •	C.R.G. •
A.R.L. ∘	C.R.G. ∘
A.R.L. +	V.M.H. +

FIGURE 41.



Cardiac width.

FIGURE 42.

MEAN CARDIAC WIDTH - MALES

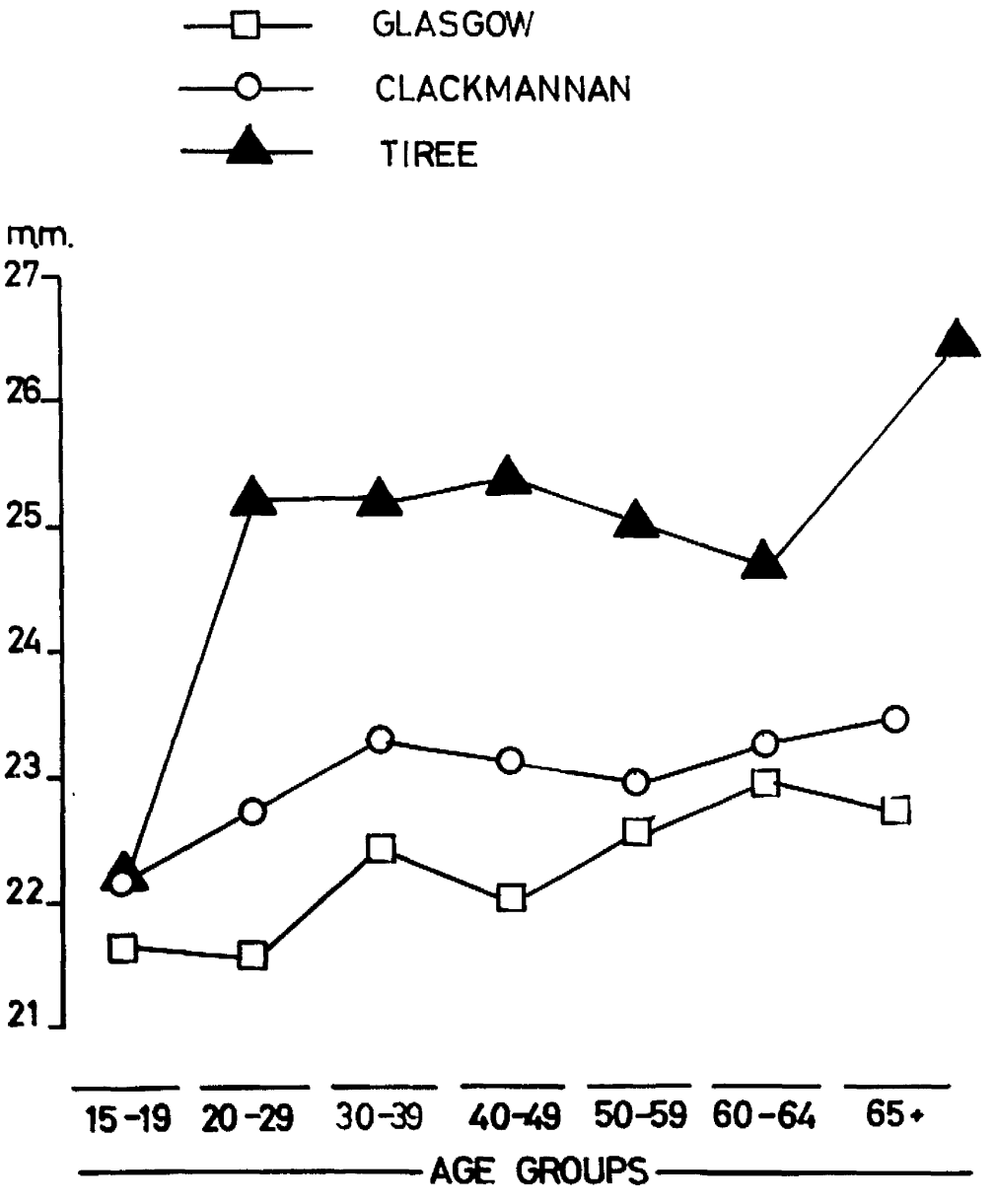


TABLE 212(a)

ANALYSIS OF VARIANCE FOR DIASTOLIC BLOOD PRESSURE.

Source of Variation.	Degrees of Freedom	Sum of Squares.	Mean Square	F-ratio	Significance
Between Patients	11	34,306.75	3,118.8	54.53	$P < 0.001$
Between Orders	2	144.67	72.33	1.26	N/S.
Between Observers	2	33.5	16.75	0.29	N/S
Residual	20	1,143.83	57.19		
Total	35	35,628.75	-		

TABLE 212(b)

ANALYSIS OF VARIANCE FOR SYSTOLIC BLOOD PRESSURES.

Source of Variation	Degrees of Freedom.	Sum of Squares	Mean Square	F-ratio	Significance
Between patients	11	41,684.08	3,789.46	32.61	$p < 0.1\%$
Between Orders	2	0.67	0.33	0.003	$p < 1\%$
Between Observers	2	476.17	238.08	2.05	N/S
Residual	20	2,323.83	116.19		
Total	35	44,484.75	-		

TABLE 213.

MEAN, STANDARD DEVIATION, AND SIGNIFICANCE LEVELS FOR CARDIAC WIDTH (mm.) BY AGE, SEX AND AREA.

Age	MALES					FEMALES				
	Glasgow	P.Value between G.and T.	Tiree	P.Value between T.and C.	Clackmannan	Glasgow	P.Value between G.and T.	Tiree	P.Value between T.and C.	Clackmannan
15-19	21.6±1.9	N.S.	22.3±2.1	N.S.	22.1±2.1	19.3±1.8	0.1%	21.5±1.5	N.S.	20.9±2.3
20-29	21.6±2.4	0.1%	25.2±2.2	0.1%	22.7±2.1	20.8±2.6	0.1%	23.3±1.5	0.1%	21.0±2.2
30-39	22.4±2.5	0.1%	25.2±1.7	0.1%	23.3±2.2	21.3±2.5	2%	22.6±1.8	0.1%	19.9±1.7
40-49	22.0±2.0	0.1%	25.3±2.5	0.1%	23.1±2.1	21.1±2.0	0.1%	22.9±2.4	1%	21.3±2.0
50-59	22.5±2.6	0.1%	25.0±2.3	0.1%	22.9±2.2	22.1±2.6	2%	23.5±2.2	N.S.	22.6±1.9
60-64	22.9±2.9	5%	24.7±2.5	5%	23.2±2.2	21.0	-	24.2±1.8	2%	21.5±1.9

G. = Glasgow. T. = Tiree. C. = Clackmannan.

TABLE 214.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of ANGINA

DIASTOLIC BLOOD PRESSURE

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	32	76.781	9.960	105.0	170	79.712	13.352	140	-1.1803	200	-
	F	11	82.727	7.198	90	67	82.433	12.049	125	0.0785	76	+
Clackmannan	M	55	85.764	13.804	124	296	84.780	12.102	140	0.5408	349	+
	F	4	88.750	15.478	110	38	82.079	10.515	106	1.1574	40	+
Tiree	M	8	92.500	25.009	147	106	86.906	14.510	140	0.9922	112	+
	F	16	98.250	18.484	127	96	90.719	15.740	127	1.7279	110	+

TABLE 215.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of ANGINA

SYSTOLIC BLOOD PRESSURE.

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	32	138.125	14.148	172.0	170	137.735	20.584	230	0.1025	200	+
	F	11	138.636	16.446	160	67	136.284	19.812	220	0.3727	76	+
Clackmannan	M	55	137.764	21.726	210	296	137.311	17.341	220	0.1705	349	+
	F	4	150.000	25.820	180	38	135.158	18.032	170	1.5076	40	+
Tiree	M	7	148.286	31.431	203	106	151.981	27.562	229	-0.3408	111	-
	F	16	164.062	30.357	221	95	157.674	25.409	230	0.9042	109	+

TABLE 216.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t.values with degrees of Freedom (D.F.)and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of INFARCTION

DIASTOLIC BLOOD PRESSURE.

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	15	75.533	13.065	100	187	79.545	12.872	140	-1.1602	200	-
	F	9	81.111	9.610	90	69	82.652	11.722	125	-0.3775	76	-
Clackmannan	M	35	86.429	15.122	124	316	84.769	12.043	140	0.7527	349	+
	F	1	-	-	-	41	-	-	-	-	-	0
Tiree	M	4	84.500	6.557	90	110	87.400	15.609	147	-0.3691	112	-
	F	3	111.667	24.846	127	109	91.248	15.807	127	2.1783	110	+

TABLE 217.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of INFARCTION

SYSTOLIC BLOOD PRESSURE.

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	15	137.467	17.984	172	187	137.824	19.850	230	-0.0674	200	-
	F	9	136.667	13.200	160	69	136.609	19.559	220	0.0034	76	+
Clackmannan	M	35	135.829	24.733	210	316	137.554	17.212	220	-0.5356	349	-
	F	1	-	-	-	41	-	-	-	-	-	0
Tiree	M	4	143.250	19.259	172	109	152.064	27.949	229	-0.6239	111	-
	F	3	188.000	35.763	221	108	157.778	25.549	230	2.0034	109	+

TABLE 218.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t.values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of CLAUDICATION

DIASTOLIC BLOOD PRESSURE.

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	7	74.143	14.704	90	195	79.431	12.8319	140	-1.066	200	-
	F	2	80.0	14.142	90	76	82.539	11.483	125	-0.3077	76	-
Clackmannan	M	12	79.500	7.903	90	339	85.127	12.462	140	-1.5510	349	-
	F	0	-	-	-	42	-	-	-	-	-	0
Tiree	M	2	90.500	2.121	92	112	87.241	15.507	147	0.2959	112	+
	F	2	99.500	26.163	118	110	91.655	16.208	127	0.6735	110	+

TABLE 219.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without Symptoms of CLAUDICATION

SYSTOLIC BLOOD PRESSURE.

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	7	132.571	10.861	150	195	137.985	19.911	230	-0.7143	200	-
	F	2	140.000	28.284	160	76	136.526	19.266	220	0.2498	76	+
Clackmannan	M	12	129.167	10.035	144	339	137.673	18.225	220	-1.6066	349	-
	F	0	-	-	-	42	-	-	-	-	-	0
Tiree	M	2	157.000	8.485	163	111	151.658	27.904	229	0.2695	111	+
	F	2	170.500	37.477	206	109	158.211	25.959	230	1.1436	109	+

TABLE 220.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without SIGNS of E.C.G.I

DIASTOLIC BLOOD PRESSURE. (mm.Hg.)

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	1	-	-	-	-	-	-	-	-	-	0
	F	0	-	-	-	-	-	-	-	-	-	0
Clackmannan	M	3	90.000	17.321	100	348	84.891	12.343	140	0.7110	349	+
	F	0	-	-	-	42	-	-	-	-	-	0
Tiree	M	3	97.667	19.757	119	111	87.018	15.257	147	1.1857	112	+
	F	1	-	-	-	111	-	-	-	-	-	0

TABLE 221.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without SIGNS of E.C.G.I

SYSTOLIC BLOOD PRESSURE (mm.Hg.)

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	1	-	-	-	-	-	-	-	-	-	0
	F	0	-	-	-	-	-	-	-	-	-	0
Clackmannan	M	3	136.667	15.275	150	348	137.388	18.105	220	-0.0688	349	-
	F	0	-	-	-	42	-	-	-	-	-	0
Tiree	M	3	156.333	32.655	187	110	151.627	27.691	229	0.2894	111	+
	F	1	-	-	-	110	-	-	-	-	-	0

TABLE 222.

Number (n) Mean ($\bar{x}$) Standard deviation (S) Maximum values (Max.) and t. values with degrees of Freedom (D.F.) and direction of difference (D.D.) between the two mean values for Males and Females aged 40 - 64 with and without SIGNS of E.C.G.II

DIASTOLIC BLOOD PRESSURE (mm.Hg.)

Place	Sex	With Symptoms				Without Symptoms				t	D.F.	D.D.
		n	$\bar{x}$	S	Max.	n	$\bar{x}$	S	Max.			
Glasgow	M	11	79.091	5.991	88	191	79.257	13.194	140	-0.0413	200	-
	F	2	77.500	10.601	85	76	82.605	11.511	125	-0.6197	76	-
Clackmannan	M	22	89.682	14.190	110	329	84.617	12.141	140	1.8661	349	+
	F	1	-	-	-	41	-	-	-	-	-	0
Tiree	M	9	96.889	24.781	147	105	86.476	14.178	140	1.9745	112	+
	F	8	93.375	17.752	123	104	91.673	16.254	127	0.2837	110	+