

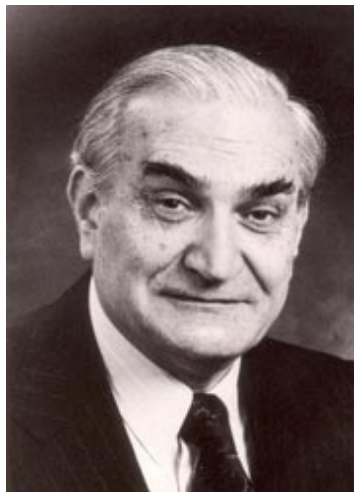
Reid CM (2008). Donald Darnley Reid (1914-1977).



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Early Life

No-one who met Donald Reid could ever doubt that he was proud to be a Scot. Although his work took him all over the world, he never forgot his roots. He was the only child of Donald Reid, a telephone linesman, and Mary (née Darnley), who was twelve years older than her husband and nearly 40 when Donald was born on 6 May 1914 in Buckie, a small fishing village on the north-east coast of Scotland. Although Donald had a loving relationship with both parents, his mother – a woman of strong character, courage and integrity - was a particularly strong influence, as was his paternal grandfather (the schoolmaster in Struy), who encouraged him to read extensively.



Cite as:

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When Donald was six, the family moved to Inverness, where he attended the local primary school and then Inverness Royal Academy, the local co-educational secondary school. Donald was taught English there by Donald John MacDonald, who was responsible for his pupil's lifelong love for language and mastery of words. Although his father was by then a Post Office engineering inspector, finances were tight, particularly as his parents were caring for Donald's orphaned twin cousins (perhaps as a consequence, Donald was always very careful with money and reluctant to undertake unnecessary expenditure, such as using taxis).

It was at the Academy in Inverness that Donald met 15-year old Christine MacLeod, and they both went on to the University of Aberdeen, he to study medicine and she, languages. They married and became life companions in 1939.

Early Career

Donald graduated in medicine in 1937 and did house jobs in the Royal Northern Infirmary, Inverness. Realising that war was imminent, he joined the Royal Air Force Volunteer Reserve in September 1939 and was called up and posted to Bomber Command. Over and above the normal duties of a station medical officer, Donald began to study the tremendous stresses to which the bomber crews were exposed, and his enduring admiration for these often very young airmen was profound. By bringing together the medical records and the operational records of flights and casualties, he was able to demonstrate that psychological breakdown related to the cumulative effect of multiple dangerous missions.

This was the beginning of psychiatric epidemiology (20 years later he wrote on the use of epidemiological methods to study mental disorders - Reid 1960a), and his work drew him to the attention of the Director General of Medical Services, who posted him to the Medical Directorate of the Royal Air Force in 1942. There he met the man who was to change the direction of his professional life and for whom he had the greatest respect, admiration and affection - the statistician, Austin Bradford Hill. Hill had been in the Royal Flying Corps during the First World War and was then working as a civilian consultant to the Royal Air Force.

After continuing to study psychological disorders in air crew throughout the War, Donald considered a career in clinical psychiatry. However, Bradford Hill persuaded him to develop his interest in epidemiology. Donald was offered and accepted a lectureship in Hill's department at the London School of Hygiene and Tropical Medicine, part of the University of London. He went on to be appointed reader in epidemiology and vital statistics in 1956, professor of epidemiology in 1959, and, succeeding Bradford Hill, head of the Department of Medical Statistics and Epidemiology in 1961. Apart from a period as visiting associate professor of biostatistics at the University of California in 1948-9, and in spite of some tempting offers to move elsewhere, he remained at the London School until his death on 26 March 1977.

Like his mentor Bradford Hill (Chalmers 2003), Donald always prepared his lectures scrupulously, even though they

usually appeared to his audience to be spontaneous. His teaching was appreciated by the mature medical students returning from the Second World War to start a career in public health. Later he was always on the lookout for young people of talent who might find his rather unusual subject interesting and challenging. He was a caring person, who inspired the affection of the staff of his department, from cleaner to senior academic. He felt a personal responsibility for those who came to work with him, followed their subsequent careers with great interest, and was delighted that so many combined their epidemiology with clinical practice. However, although he was lively and often amusing in public, he suffered from doubts, perplexities and fatigue.

Clinical trials

Donald's research included both clinical trials and epidemiological investigations. His early appreciation of the fundamentals of clinical trials – and of the need for medical researchers and statisticians to work together - is made clear the illustrative passage selected for reproduction in the *James Lind Library* ([Reid 1950a](#)). This passage is taken from his contribution to a conference in New York on 28 and 29 January 1949, organised under the aegis of the Section of Biology of the New York Academy of Sciences, the Biometric Society, and the New York Chapter of the American Statistical Association. He used the iconic MRC trial of streptomycin for pulmonary tuberculosis, published the previous year ([Medical Research Council 1948](#)), to emphasise that a clinical trial must start with a clear definition of the experimental group, address any ethical problem of control, and lay down precise criteria of diagnosis, progress and cure ([Reid 1950a](#)).

Donald wrote other early expository papers about clinical trials ([Reid 1954a](#); [1960b](#); [1960c](#); [1969](#)), and was involved in randomised trials of treatments as commonplace as senna preparations for constipation ([Browne et al. 1957](#)), and as potentially lifesaving as anticoagulant drugs for myocardial infarction ([Reid 1960c](#)). In the early 1950s he was involved in a 9-centre, placebo-controlled randomised trial to test claims that stilboestrol and ethisterone had beneficial effects on the outcome of pregnancy in women with diabetes. Like other controlled trials of hormone use in pregnancy reported in the early 1950s, no beneficial effects were detected ([Medical Research Council 1955](#)), yet, in spite of the lack of any scientific support for the practice, many obstetricians continued to prescribe the drug until the late 1960s, when it was shown to have caused cancer in the daughters of women who had been given the drug during pregnancy ([Why fair tests are needed, JLL](#)).

Donald's most substantive involvement in clinical trials was with the Medical Research Council trials of anticoagulants after myocardial infarction ([Reid 1960c](#); [Medical Research Council 1964](#); [1969](#); [1970](#)). These highlighted the problem of maintenance of contact with patients. Information about 86 per cent of those lost from the original series was obtained by involving the patients' family physicians and the Ministry of Pensions and National Insurance. After reviewing the quality of similar studies in other countries he concluded that more than half of the drug trials relating to myocardial infarction reported in North American medical journals were insufficiently well controlled ([Reid 1969](#)). These ideas and principles were made clear in the 1970 report of a remarkable international collaborative analysis of long-term anti-coagulant administration after acute myocardial infarction ([International Anticoagulant Review Group 1970](#)). Donald had supervised the analysis, which was based on the individual records of over 2500 patients who had participated in nine randomised trials of long term anticoagulant therapy after infarction.

Three years before he died, Donald and his colleagues reported the results of a screening survey of 18,403 male civil servants aged 40-64. They had looked for evidence of cardio-respiratory disease and diabetes using a questionnaire and brief examination, including measurement of height, weight, blood pressure, skinfold thickness, and respiratory function, an electrocardiograph, and blood sugar and cholesterol estimations ([Reid et al. 1974](#)). Although Donald did not survive to see their results, two randomised control trials were set up within this cohort of civil servants. In one of the trials, men judged to be at high risk of coronary heart disease or disabling chronic bronchitis were allocated to a group counselled to stop smoking, or to a control group. In the other trial, men with borderline diabetes were counselled to reduce sugar intake and then randomised to receive phenformin or placebo with or without dietary restriction.

Epidemiology

Although Donald was unambiguously a pioneer in the post-Second World War era of clinical trials, he was involved more actively in epidemiological research and contributed to the development of the discipline throughout his career ([Reid 1950b](#); [Reid 1961](#); [Reid 1975a](#)). He was one of a new generation of epidemiologists who drew their specialty away from its former sole focus on infectious diseases and towards the emerging epidemics of chronic diseases. The introduction of the National Health Service inspired him to seek out morbidity and mortality information collected on a national scale, along with details of the environment and the habits of the sick and the healthy.

Between 1949 and 1952, Donald and CG Roberts surveyed the records of disabling illness and premature death in male post office workers ([Roberts and Reid 1954](#)). They identified a gross disparity in the rates of retirement on grounds of ill-health between workers whose jobs made different physical demands upon them: older manual workers suffered 50 per cent more occupational disability or death before 60 than non-manual workers.

During the 1950s, Donald devised modes of analysis of sickness records to monitor the spread of the common cold

among office workers (Reid et al. 1953), the incidence of cancer in coking plant workers (Reid and Buck 1956), and the hazard of tuberculosis in pathology laboratory staff (Reid 1957), and he promulgated the use of morbidity data and sickness and disease recording systems to generate data for statistical and epidemiological methods in occupational medicine (Reid 1954b). His main interest at that time was in associations between respiratory disease and environmental pollution and minor respiratory illnesses. He had a particular interest in chronic bronchitis and reviewed the evidence for the possible aetiological importance of smoke pollution and infections such as the influenza outbreak of 1952 (Reid 1956).

By the late 1950s his interest was extending to what he referred to as 'the rising menace of ischaemic heart disease' and the nature and sources of epidemiological evidence as to its cause. He conducted a historical review of the work done up till then, which had considered psychological stress, alcohol, tobacco, physical activity and diet, and concluded that the epidemiological evidence was not strong enough to incriminate any particular agent as the major determinant (Reid 1958).

Throughout the 1960s until his death in 1977 his interests covered the epidemiology of both respiratory and cardiovascular disease. For example, a survey conducted through the Royal College of General Practitioners identified smoking, air pollution and social environment as causes of serious disability and death from chronic non-specific lung disease (Respiratory Diseases Study Group 1961), and a study of 676 post office van drivers yielded data on cardiovascular symptoms and physical findings (Reid et al. 1966). For these studies, Donald and his colleagues developed standardised examination techniques and emphasized the need for critical evaluation of preventive measures. He subsequently became actively involved in international studies comparing cardio-respiratory disease incidence in groups of migrants compared with native-born residents in the USA, UK and Norway (Reid 1966). After a decade of experience with such studies, he wrote about how these migrant studies needed imagination in conception, perseverance in conduct and an acceptance of the discipline of standard methods and centralised control over a long period (Reid 1975b).

The year before his death, the *Lancet* published a report by Donald and his colleagues on a 5-year follow-up of their study of British civil servants, demonstrating that the main risk factors for cardiac morbidity and mortality were cigarette smoking, raised blood pressure, and raised blood cholesterol (Reid et al. 1976).

National and international recognition

Donald Reid served on many committees of the British Medical Research Council; he was a member of WHO expert groups on epidemiological methods, atherosclerosis, cor pulmonale, and chronic non-specific lung disease, and chair of the WHO Expert Committee on Twin Studies. His mischievous wit was described as making dull meetings less so. He was also a WHO consultant to the governments of the USA, Sweden, Japan, Turkey, Romania, Bulgaria and Yugoslavia.

He held numerous distinctions, including the presidency of the Section of Epidemiology and Preventive Medicine of the Royal Society of Medicine; the Milroy and Marc Daniel Memorial Lectureships of the Royal College of Physicians of London; the Sydney Watson Smith and the John Matheson Shaw lectureships of the Royal College of Physicians of Edinburgh; the Cutter Lectureship at Harvard; and an honorary fellowship of the American College of Cardiology.

Donald Reid died suddenly at home at the age of 62 from an acute myocardial infarction. His colleagues at the London School of Hygiene and Tropical Medicine subsequently set up a memorial fund, and contributions from all over the world were used to establish the Donald Reid Medal, which is awarded every three years for outstanding contributions to epidemiology. A memorial volume of the *Journal of Epidemiology and Community Health* (1978;32) contains a foreword by the dean of the School, a biography, a bibliography and papers by friends, colleagues and former students, which were chosen to demonstrate the breadth and depth of Donald's interests and influence.

At the time of his death, Donald's friend and colleague Geoffrey Rose wrote that Donald "set a standard in British epidemiology and won for it the esteem of clinicians and public health workers alike. The characteristics of his own work became the guiding principles of his pupils and of all who worked with him - to give meticulous care to detail; to know the strength and limitations of one's data; to form intuitive judgements and then to test them by cold reason; to allow neither laziness nor impatience to erode the determination to get it right; and in all these activities, to be guided by the human values of compassion, integrity and humility".

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