

Journal of the Royal Society of Medicine

<http://jrs.sagepub.com/>

Donald Darnley Reid (1914–1977)

Catriona Reid

J R Soc Med 2011 104: 424

DOI: 10.1258/jrsm.2011.11k024

The online version of this article can be found at:
<http://jrs.sagepub.com/content/104/10/424>

Published by:



<http://www.sagepublications.com>

On behalf of:



[The Royal Society of Medicine](http://www.sagepub.com)

Additional services and information for *Journal of the Royal Society of Medicine* can be found at:

Email Alerts: <http://jrs.sagepub.com/cgi/alerts>

Subscriptions: <http://jrs.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [Version of Record](#) - Oct 1, 2011

[What is This?](#)



Donald Darnley Reid (1914–1977)

Catriona Reid

16 Darlington Place, Bath BA2 6BX, UK

Email: catriona.rowe@yahoo.co.uk

DECLARATIONS

Competing interests

None declared

Funding

None

Ethical approval

Not applicable

Guarantor

CR

Contributorship

CR is the sole contributor

Acknowledgements

Additional material for this article is available from The James Lind Library website (www.jameslindlibrary.org), where it was originally published

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 12 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.

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. Realizing 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 disorders¹), 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 World War I 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 1948–1949, 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,² 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 World War II 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 in the illustrative passage selected for reproduction in the James Lind Library.³ This passage is taken from his contribution to a conference in New York on 28 and 29 January 1949, organized 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,⁴ to emphasize 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.³

Donald wrote other early expository papers about clinical trials,^{5–8} and was involved in randomized trials of treatments as commonplace as senna preparations for constipation,⁹ and as potentially life-saving as anti-coagulant drugs

for myocardial infarction.⁷ In the early 1950s he was involved in a nine-centre, placebo-controlled randomized 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,¹⁰ 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.¹¹

Donald's most substantive involvement in clinical trials was with the MRC trials of anti-coagulants after myocardial infarction.^{7,12–14} These highlighted the problem of maintenance of contact with patients. Information about 86% 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.⁸ 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.¹⁵ Donald had supervised the analysis, which was based on the individual records of over 2500 patients who had participated in nine randomized trials of long-term anti-coagulant 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.¹⁶ Although Donald did not survive to see their results, two randomized 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 randomized to receive phenformin or placebo with or without dietary restriction.

Epidemiology

Although Donald was unambiguously a pioneer in the post World War II era of clinical trials, he was involved more actively in epidemiological research and contributed to the development of the discipline throughout his career.^{17–19} 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.²⁰ 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% 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,²¹ the incidence of cancer in coking plant workers,²² and the hazard of tuberculosis in pathology laboratory staff,²³ 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.²⁴ 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 1952.²⁵

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.²⁶

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,²⁷ and a study of 676 post office van drivers yielded data on cardiovascular symptoms and physical findings.²⁸ For these studies, Donald and his colleagues developed standardized 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.²⁹ 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 centralized control over a long period.³⁰

The year before his death, the *Lancet* published a report by Donald and his colleagues on a five-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.³¹

National and international recognition

Donald Reid served on many committees of the British MRC; 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* (March 1978; Volume 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.'

References

- 1 Reid DD. *Epidemiological methods in the study of mental disorders*. Public Health Papers No. 2. Geneva: World Health Organization, 1960
- 2 Chalmers I. Fisher and Bradford Hill: theory and pragmatism? *Int J Epidemiol* 2003;**32**:922–4
- 3 Reid DD. Statistics in clinical research. *Ann New York Acad Sci* 1950;**52**:931–4
- 4 Medical Research Council. Streptomycin treatment of pulmonary tuberculosis. *BMJ* 1948;**2**:769–82
- 5 Reid DD. The design of clinical experiments. *Lancet* 1955;**2**:1293–6
- 6 Reid DD. The patient as his own control. In: *Controlled clinical trials: papers at a conference of the Council for International Organisations of Medical Science*. Oxford: Blackwell, 1960:87–93
- 7 Reid DD. A trial of long-term anti-coagulant administration after myocardial infarction. In: *Controlled clinical trials: papers at a conference of the Council for International Organisations of Medical Science*. Oxford: Blackwell, 1960:109–14
- 8 Reid DD. The design and conduct of clinical trials in myocardial infarction. *Circulation* 1969;**40** (Suppl. 4):91–8
- 9 Browne JCMcC, Edmunds V, Fairbairn JW, Reid DD. Clinical and laboratory assessments of senna preparations. *BMJ* 1957;**1**:436–9
- 10 Medical Research Council. The use of hormones in the management of pregnancy in diabetics: Report to the Medical Research Council by their Conference on Diabetes in Pregnancy. *Lancet* 1955;**269**:833–6
- 11 Editorial commentary. Why fair tests are needed. *The James Lind Library* 2007. See www.jameslindlibrary.org
- 12 Medical Research Council (1964). An assessment of long-term anti-coagulant administration after cardiac infarction. Second report of the Working Party on anticoagulant therapy in coronary thrombosis to the Medical Research Council. *BMJ* 1964;**2**:837–43
- 13 Medical Research Council. Assessment of short-term anti-coagulant administration after cardiac infarction. Report of the Working Party on Anticoagulant Therapy in Coronary Thrombosis to the Medical Research Council. *BMJ* 1969;**1**:335–42
- 14 Medical Research Council. Collaborative analysis of long-term anti-coagulant administration after acute myocardial infarction: an international anti-coagulant review group. *Lancet* 1970;**1**:203–9
- 15 International Anticoagulant Review Group. Collaborative analysis of long-term anti-coagulant administration after acute myocardial infarction. *Lancet* 1970;**1**:203–9
- 16 Reid DD, Hamilton PJS, Keen H, Brett GZ, Jarrett RJ, Rose G. Cardiorespiratory disease and diabetes among middle-aged male civil servants: a study of screening and intervention. *Lancet* 1974;**1**:469–73
- 17 Reid DD. Field epidemiology: the technical aspects. *J R Sanit Inst* 1950;**70**:289–92
- 18 Reid DD. Epidemiological methods in the study of disease. In: Hobson W, ed. *The theory and practice of public health*. Oxford: Oxford University Press, 1961:27–33
- 19 Reid DD. Epidemiological methods in the study of disease. In: Hobson W, ed. *The theory and practice of public health*. 4th edn. Oxford: Oxford University Press, 1975:44–54
- 20 Roberts CJ, Reid DD. Premature disablement and death among Post Office workers. *Br J Prev Soc Med* 1954;**8**:147–52
- 21 Reid DD, Williams REO, Hirsch A. Colds among office workers: an epidemiological study. *Lancet* 1953;**2**:1303–6
- 22 Reid DD, Buck C. Cancer in coking plant workers. *Br J Ind Med* 1956;**13**:265–9
- 23 Reid DD. Incidence of tuberculosis among workers in medical laboratories. *BMJ* 1957;**2**:10–14
- 24 Reid DD. Statistical and epidemiological methods in occupational medicine. In: Merewether ERA, ed. *Industrial medicine and hygiene, Vol 1*. London: Butterworth, 1954:58–87
- 25 Reid DD. General epidemiology of chronic bronchitis. *Proc R Soc Med* 1956;**49**:767–71

- 26 Reid DD. The epidemiology of coronary disease. *Practitioner* 1958;**180**:184–90
- 27 Respiratory Diseases Study Group. Chronic bronchitis in Great Britain: a national survey carried out by the Respiratory Diseases Study Group of the College of General Practitioners. *BMJ* 1961;**2**:973–9
- 28 Reid DD, Holland WW, Humerfelt S, Rose G. A cardiovascular survey of British postal workers. *Lancet* 1966;**1**:614–18
- 29 Reid DD. *Studies of disease among migrants and native populations in Great Britain, Norway and the United States.* *Epidemiological approaches to the study of cancer and other chronic diseases.* Bethesda, MD: US Department of Health, Education and Welfare, 1966 (National Cancer Institute Monograph No. 19)
- 30 Reid DD. International studies in epidemiology. *Am J Epidemiol* 1975;**102**:469–76
- 31 Reid DD, McCartney P, Jarrett RJ, Hamilton PJS, Rose G, Keen H. Smoking and other risk factors for coronary heart disease in British civil servants. *Lancet* 1976;**2**:979–83