

THE BLOOD PRESSURE UNIT

Beaumont Hospital

ANNUAL REPORT, PUBLICATIONS

AND

SCIENTIFIC PRESENTATIONS

1997

Contents

Introduction	3
Blood Pressure Unit Staff	6
Scientific Publications for 1997	7
General and educational publications for 1997	9
Scientific and educational communications for 1997	10
Collaborative Projects	12
Editorial Board and Committee membership	14

Introduction

The Blood Pressure Unit was founded in 1978 in the Charitable Infirmary, Jervis Street, with support provided by the Charitable Infirmary and the Royal College of Surgeons in Ireland. From the outset the Unit has concentrated on research into the pharmacology of blood pressure lowering drugs, particularly in the elderly, and on the development of blood pressure measuring techniques, especially techniques of ambulatory blood pressure measurement. To-date some 450 publications on these research areas have been produced by the Unit.

In 1997 the Blood Pressure Unit continued its research interests, publishing 13 scientific papers, 2 chapters in books, 3 books and booklets, 6 letters in journals, and 7 papers of general educational and cultural interest. The Unit enters 1998 with many research projects underway.

Members of the Unit delivered scientific presentations at home and in 6 countries abroad.

On the service level the Shared Care Programme was updated and there was a continuing increase in the number of patients seen at out-patients but the waiting list for new referrals has been maintained at a maximum of six to eight weeks. This year the Unit established new techniques for assessing arterial target organ damage, namely tonometry and pulse wave velocity techniques.

The day case facility for the exclusion of secondary hypertension continued to investigate one patient weekly with a surprisingly high 30% detection rate for a cause for hypertension, which was curable in many instances. The numbers attending the weekly Lipid Clinic, under the direction of Professor Fitzgerald, continued to grow mainly due to the increasing demand for expert advice in the use of lipid lowering drugs in managing the dyslipidaemias. The elderly with hypertension, who have always been a special concern of the Unit, had their special needs attended to by Dr. J. Duggan who holds a weekly clinic for older patients. The ADAPT (Arterial Disease Assessment Prevention and Treatment) Clinic was established in collaboration with Professor D. Bouchier-Hayes. The rationale for this unique clinic is to ensure that all patients with cardiovascular disease receive the most comprehensive risk factor assessment with appropriate life-style modification and treatment directed at the arterial organ, which is central to all cardiovascular disease.

The results of two important studies in which the Blood Pressure Unit at Beaumont Hospital played a major part, were published in the *Lancet* and the *Journal of the American Medical Association*. Two clear messages emerged from these studies: firstly, that isolated systolic hypertension in the elderly should be treated and that doing so reduces stroke by over 40 % and cardiac events by over 30%, and secondly, that assessing blood pressure with ABPM rather than office BP results in less drug prescribing with a better quality of life for hypertensive patients.

The Unit continued to participate in a number of important international collaborative studies. First, the Unit played a co-ordinating role in the European multicentre Syst-Eur II trial (with the University of Louvain). The Office versus Ambulatory (OvA) Study (with the University of Gent) has now been in progress for a decade and the preliminary results have just been analysed. The TOHP Study (with the University of Louvain) is designed in the same manner as the successful APTH Study, but examines the effect of prescribing blood pressure lowering drugs according to self (home) blood pressure measurement, rather than according to conventional blood pressure measurement. Other international studies in progress include the HYVET (with the Hammersmith Hospital) to determine the benefits of treating very elderly patients with hypertension, and the PROGRESS study (with Glasgow University and the University of Auckland), which is studying the possible benefit of ACE inhibition in patients with stroke. Phase II of the Allied Irish Bank Study in collaboration with the University of Louvain and Cornell University in New York, in which 800 employees who had had ambulatory blood pressure measured 7 years ago are being recalled for repeat measurement and a detailed cardiovascular assessment including echocardiography, is continuing. The Unit is playing a major role in the Anglo-Scandinavian Cardiovascular Outcome Trial (ASCOT) which aims to recruit 18,000 patients at high risk from cardiovascular complications of hypertension to determine which blood pressure lowering or cholesterol lowering drug is most beneficial in preventing stroke and heart attack. I am a member of the Steering Committee and Chairman of the Sub-study Committee for this important trial.

I continued to act during the year as Chairman of both the Working Party on Blood Pressure Measurement of the British Hypertension Society and of the Committee for Revision of the Standards for Mercury and Aneroid Sphygmomanometers of the British Standards Institution. I am also a member of the European Standards Committee in Berlin which has the responsibility of drafting a Directive for standards of blood pressure measuring devices, the first two parts of which were published in 1996 with the final part being due for publication in 1997. I was elected Chairman of the an international Working Group on Blood Pressure Measurement which is affiliated to the European Society of Hypertension and the International Society of Hypertension.

As well as continuing basic pharmacological research on blood pressure lowering drugs, the Unit continued to evaluate the accuracy and reliability of systems of ambulatory blood pressure measurement and in this capacity acts as adviser to many standards institutions.

The service work and research in hypertension outlined in this report was facilitated by continuing support from the Charitable Infirmary Charitable Trust, the Research Committee of the Royal College of Surgeons, the Irish Heart Foundation and Beaumont Hospital, each of which provided the much needed facilities and support for staff, without which the achievements listed in this report would not have been possible. I would like to pay tribute to the diligence and loyalty of all the staff in the Unit, characteristics which facilitate the team approach so necessary in scientific research. I would like to acknowledge with gratitude the support of our colleagues, both clinical and administrative and I also

wish to acknowledge the importance of the facility provided for our research work in the Clinical Investigation Area of the Hospital, without which it would not have been possible to conduct much of the work outlined in this report.

Eoin O'Brien

Director

31/12/1997

The Blood Pressure Unit

Staff 1997

Medical

Professor Eoin O'Brien

Dr. Paddy Owens

Professor Desmond Fitzgerald

Dr. Louis Keary

Dr. Joseph Duggan

Dr. Ronan Ryan

Professor Kevin O'Malley

Dr. Cianán O'Sullivan

Nursing

Sister Fáinsía Mee

Nurse Ruth Nallon

Sister Teresa Sexton

Nurse Dáire Ryan

Nurse Allison Sexton

Nurse Lee Ann Clavin

Technical and secretarial

Mr. Neil Atkins Computer Analyst

Ms Giselle Estridge Secretarial

Mr. Simon Lyons Echocardiographer

Ms Valerie Hughes Secretarial

Ms Marie Gorman Dietician

SCIENTIFIC PUBLICATIONS 1997

Original papers

1. Staessen J, O'Brien E, Bieniaszewski L, Imai Y, Thijs L, Fagard R on behalf of the 'Ad Hoc' Working Group. The Nocturnal Blood Pressure Fall on Ambulatory Monitoring in a Large International Database. *Hypertension* 1997;**29**:30-39.
2. Staessen J, Thijs L, Bijltebier G, Clement D, O'Brien ET, Palatini P, Rodicio J, Rosenfeld J, Fagard R on behalf of the Systolic Hypertension in Europe (SYST-EUR) Trial Investigators.. Determining the Trough-to-Peak Ratio in Parallel Group Trials. *Hypertension* 1997;**29**:659-667
3. Higgins J, Walshe J, Halligan A, O'Brien E, Conroy R, Darling M. Can 24-hour ambulatory blood pressure measurement predict the development of hypertension in primigravidae? *Br J Obstet & Gynaecol* 1997;**104**:356-362
4. O'Brien E, Atkins N. Accuracy of the Dinamap Portable Monitor, Model 8100: a review of the evidence for accuracy. *Blood Pressure Monitoring* 1997;**2**:31-33
5. Owens P, O'Brien E. Hypotension: a forgotten illness. *Blood Pressure Monitoring* 1996;**2**:3-14
6. [O'Brien E] Non-invasive sphygmomanometers. Part 3. Supplementary requirements for electro-mechanical blood pressure measuring systems. British Standard BS EN 1060-3: 1997. European Standard EN 1060-3 1997. European Committee for Standardization. Central Secretariat: rue de Stassart 36, B-1050, Brussels.
7. Staessen JA, Fagard R, Thijs L, Celis H, Arabidze GG, Birkenhager WH, Bulpitt CJ, de Leeuw P, Dollery CT, Fletcher AE, Forette F, Leonetti G, Nachev C, O'Brien ET, Rosenfeld J, Rodicio JL, Tuomilehto J, Zanchetti A, for the Systolic Hypertension in Europe (Syst-Eur) Trial Investigators. Randomised double-blind comparison of placebo and active treatment for older patients with isolated systolic hypertension. *Lancet*.1997;**350**:757-764
8. Staessen JA, Byttebier G, Buntinx F, Celis H, O'Brien ET, Fagard R, for the Ambulatory Blood Pressure Monitoring and Treatment of Hypertension Investigators. Antihypertensive Treatment Based on Conventional or Ambulatory Blood Pressure Measurement.: A Randomized Controlled Trial . *JAMA*. 1997;**278**:1065-1072.
9. Antikainen R, Tuomilehto J, Thijs L, Vanhanen H, Sarti C, Birkenhager W, Arabidze G, Fagard R, Grigorow M, et al on behalf of the Syst-Eur Investigators. Therapy in old patients with isolated systolic hypertension - fourth progress report on the Syst-Eur trial. *J Human Hypertens* 1997;**11**:263-269
10. Atkins N, O'Brien E, Wesseling KH, Guelen I. Increasing observer objectivity with audio-visual technology: the Sphygmocorder. *Blood Pressure Monitoring* 1997;**2**:269-272

Editorials

1. O'Brien E. Blood pressure measurement at the turn of the century. *Current Medical Literature; Nephrology and Hypertension* 1997;**3**:3-6
2. O'Brien E. Blood pressure measurement at the turn of the century. *Current Medical Literature; Cardiology* 1997;**16**:35-38
3. O'Brien E. Towards improving procedures for validating blood pressure measuring devices. *Blood Pressure Monitoring* 1997;**2**:247-249

Letters

1. O'Brien E. Accuracy of the Dinamap 8100. *Am J Hypertens* 1997;**10**:143-14428/6/96)
2. Halligan WF, O'Brien E. Ambulatory Blood Pressure Monitoring During Pregnancy - Establishment of Standards of Normalcy. *Am J Hypertens* 1996;**9**:1240-1241
3. O'Brien E. Literature and history in medicine. *Lancet* 1997;**349**:1393
4. O'Brien E. Inaccuracy of the Dinamap Portable Monitor Model 8100. *Lancet* 1997;**349**:1026
5. Staessen JA, Thijs L, Fagard R, Bieniaszowski L, O'Brien E, Gosse P, Hayashi H, Imai Y, Kawasaki K, Otsuka K, Palatini P. Nocturnal Blood Pressure Fall. *Hypertension*. 1997;**30**:1295-1296.
6. Staessen J, Birkenhager WH, Dollery C, Fagard R. Treatment of hypertension in elderly patients. *Lancet* 1997;**350**:1632-1634.

Books and Booklets

1. O'Brien E, Petrie J, Littler WA, de Swiet M, Padfield PD, Dillon MJ, Coats A, Mee F. Blood Pressure Measurement: Recommendations of the British Hypertension Society. BMJ Publishing Group. Third Edition. 1997
2. O'Brien E, Beevers G, Marshall D. ABC de la Hipertensión. Ancora SA. Spain. 1997.
3. O'Brien E, Beevers G, Marshall HJ. Manual de Hipertensao. Santos Livaria Editora. Brazil. 1997

Book chapters

1. O'Brien E. Ambulatory blood pressure measurements as a guide for predicting the occurrence of hypertensive organ involvement. *Handbook of Hypertension*. Ed: L. Hansson. Series eds: J. Reid & W. Birkenhager. 'Assessment of Hypertensive Organ Damage'. Elsevier. Amsterdam. 1997. Pp. 28-42
2. Duggan J, O'Brien E. Ambulatory blood pressure in the older adult and blood pressure measurement. *Hypertension in the Older Adult*. Ed. A.K.Scott. Arnold. London. 1997. Pp. 103-128

Abstracts

1. O'Sullivan C, Duggan J, Atkins N, Sexton A, Mee F, O'Brien E. Ambulatory blood pressure levels in the elderly. *J Hypertens* 1997;**15** (Suppl 4):S15
2. Staessen J, Thijs L, Byttebier G, Clement D, O'Brien ET, Palatini P, Rodicio JL, Rosenfeld J, Fagard R on behalf of the Systolic Hypertension In Europe (SYST-EUR) Trial Investigators. Determining the Trough-to-Peak ration in parallel-group trials. *J Hypertens* 1997;**15** (Suppl 4):S14
3. Chalmers JP for PROGRESS Management Committee. PROGRESS - patient characteristics at baseline and status in June 1996. *J Hypertens* 1997;**15** (Suppl 4):S35
4. Bulpitt CJ, Connor M, Fletcher AE, on behalf of the HYVET investigators. Orthostatic fall in blood pressure in the very elderly hypertensive (pilot trial results from the Hypertension in the Very Elderly Trial, HYVET). *J Hypertens* 1997;**15** (Suppl 4):S50

5. Seux MI, Thijs L, Forette on behalf of the Syst-Eur Investigators. Isolated systolic hypertension in elderly and cognitive functions: Experience of SYST-EUR. *J Hypertens* 1997;**15** (Suppl 4):S51
6. Coyle DP, Atkins N, Syed S, Dowdall C, Mee F, O'Brien ET. A comparison of oral celiprolol 200 mg and captopril 50 mg daily in mild to moderate hypertension. *J Hypertens* 1997;**15** (Suppl 4):S135
7. Owens P, Rodriguez S, Lyons S, de Leeuw PW, O'Brien E. White coat hypertension - LV mass and the relation to blood pressure load. *J Hypertens* 1997;**15** (Suppl 4):S176
8. Rodriguez S, Atkins N, Kroon AA, Houben AJHM, de Leeuw PW, O'Brien ET. Value of ambulatory blood pressure monitoring to ascertain treatment-resistant hypertension. *J Hypertens* 1997;**15** (Suppl 4):S188
9. Staessen JA, Byttebier G, Buntinx F, Celis H, O'Brien ET, Fagard R. for the APTH Investigators. Double-blind comparison of antihypertensive treatment guided by conventional or ambulatory blood pressure measurement. *J Hypertens* 1997;**15** (Suppl 4):S7
10. Clement D, De Buyzere M, Missault L on behalf of the OvA investigators. Value of 1, 2, 3 hour segments of ambulatory blood pressure patterns in essential hypertension. *Am J Hypertens* 1997;**10**:61A.
11. Clement DL on behalf of the OvA investigators. Ambulatory blood pressure profile in hypertensives under stable antihypertensive therapy. ESH Milan.
12. Mee F, Walshe J, O'Callaghan J, O'Brien E. Day case programme for exclusion of secondary hypertension. *J Human Hypertens* 1997;**11**:67-68
13. Owens P, Lyons S, Rodriguez S, O'Brien ET. White coat hypertension and end-organ damage: does isolated elevation of clinic blood pressure predict hypertension related end-organ damage? *J Hypertens* 1997;**15**:1539-1540

General and educational

1. O'Brien E. Nocturnal blood pressure may be more important than blood pressure during the day. *Journal by Fax* 1997: 17.3.97.
2. Owens P. Management of hypertension in the elderly. *Ir Med Times* 1997; May 2nd. 28-29.
3. O'Brien E, Owens P. Verdient Diese Altbenkannle Krankheit Ernentbeachtung? Teil I & II. *Herz: Kardiovassulaire Erkrankungen* 1997;**22**:27-28.
4. O'Brien E. Management of hypertension: What does the future hold?. *Forum*. 1997;**14**:43-45
5. O'Brien E. Treatment of isolated hypertension in the elderly reduces stroke. *Ir Med Times* 1997; Nov 15th. 38.
6. O'Brien E. *from* The Cantos of Maldoror. *The Recorder* 1997;**10**:57-65
7. O'Brien E. Samuel Beckett and the Weight of Compassion. *The Recorder* 1997;**10**:154-165
8. O'Brien E. Walk in peace: banish landmines from our globe. *BMJ* 1997;**315**:1456-1458

SCIENTIFIC AND EDUCATIONAL COMMUNICATIONS 1997

Workshops on ABPM for UK General Practitioners.

Chairman: E. O'Brien. **Belfast. 22nd January 1997.**

Syst-Eur Annual Meeting. Leuven. Belgium. 21-22nd March 1997.

Chairman: E. O'Brien. Ambulatory side-project Workshop.

Annual Research Day. RCSI. 2nd April 1997.

Owens P, Rodriguez SA, Lyons S, de Leeuw PW, O'Brien ET. White coat hypertension - LV mass and the relation to blood pressure load. Poster.

Workshop on 24-hour ambulatory blood pressure measurement in general practice.

Beaumont Hospital. 16th April 1997.

Chairman: E. O'Brien

Twelfth Scientific Meeting of the American Society of Hypertension. San Francisco. 28th - 31st May 1997.

O'Brien E. Invited Chairman of session : *Ambulatory Blood pressure*

Clement D, De Buyzere M, Missault L on behalf of the OvA investigators. Value of 1, 2, 3 hour segments of ambulatory blood pressure patterns in essential hypertension. Abstract.

Annual Meeting of the Swiss Association Against High Blood Pressure. *Hypertension Update*. Lugano. Switzerland. 12th June 1997.

O'Brien E. Validation of home blood pressure measurement devices.

European Society of Hypertension. 8th European Meeting on Hypertension. Milan. 13-16th June. 1997.

Staessen J, Thijs L, Byttebier G, Clement D, O'Brien ET, Palatini P, Rodicio JL, Rosenfeld J, Fagard R on behalf of the Systolic Hypertension In Europe (SYST-EUR) Trial Investigators. Determining the Trough-to-Peak ration in parallel-group trials.

Staessen J, Byttebier G, Celis H, O'Brien E, Fagard R and the APTH Investigators. Double-blind comparison of antihypertensive treatment guided by conventional or ambulatory blood pressure measurement.

O'Sullivan C, Duggan J, Atkins N, Sexton A, Mee F, O'Brien E. Ambulatory blood pressure levels in the elderly.

Staessen J on behalf of the Syst-Eur Investigators. The Systolic Hypertension in Europe Trial (Syst-Eur). Principal results.

Bulpitt CJ, Connor M, Fletcher AE, on behalf of the HYVET investigators. Orthostatic fall in blood pressure in the very elderly hypertensive (pilot trial results from the Hypertension in the Very Elderly Trial, HYVET)

Seux MI, Thijs L, Forette on behalf of the Syst-Eur Investigators. Isolated systolic hypertension in elderly and cognitive functions: experience of SYST-EUR.

Chalmers JP for PROGRESS Management Committee. PROGRESS - patient characteristics at baseline and status in June 1996.

Introduction of T-channel Blockers. Royal Hospital, Kilmainham, Dublin. 11th September 1997.

O'Brien E. Ambulatory blood pressure measurement in Clinical Practice.

Scientific Meeting of the British Hypertension Society. Bristol. 15th - 17th September 1997.

Owens P, Rodriguez SA, Lyons S, de Leeuw PW, O'Brien ET. White coat hypertension and end-organ damage: does isolated elevation of clinic blood pressure predict hypertension related end-organ damage?

Lectures to General Practice on 24-hour Ambulatory Blood Pressure Measurement: "When is high blood pressure hypertension?"

Castletroy Park Hotel. Limerick. 24th September 1997

Beaufield Mews. Dublin. 15th October 1997

Grand Hotel, Malahide, Dublin. 19th November 1997.

Bloomfield House. Mullingar. 21st november 1997.

45th Annual Scientific Meeting of the Irish Gerontological Society. 26-27th September 1997.

Killiney, Dublin

O'Sullivan C, Duggan J, O'Brien E. on behalf of the PROGRESS Investigators. PROGRESS - Patient characteristics and blood pressure differences

MSD University Program. Dublin. 10th October 1997.

O'Brien E. 24-hour blood pressure monitoring.

Japanese Study Group for Physiology and Management of Blood Pressure. Kyoto. Japan. 6th December 1997.

Annual Lecturer; O'Brien E. *The role of ambulatory blood pressure measurement in clinical practice.*

COLLABORATIVE PROJECTS

UNITED KINGDOM

Imperial College, St. Mary's Hospital, London

Blood Pressure Unit, Dublin. Co-ordinating Centre for Ambulatory Measurement Sub-Project.
Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Factorial Study of the Prevention of Coronary Heart Diseases and Vascular Events by Blood Pressure Lowering (comparing β -blocker based with amlodipine based therapy) and by Blood Cholesterol Lowering (comparing Atorvastatin with placebo) in 18,000 patients. Professor Peter Sever

University of Aberdeen, Scotland

1. *Shared Care Programme for out-patient management of hypertension.* Professor James Petrie
2. *Production of CD-ROM on BHS Recommendations for Blood Pressure Measurement.* Professor James Petrie

Hammersmith Hospital, London.

The HYVET Study. *Hypertension in the Very Elderly.* Professor Christopher Bulpitt

Gardiner Institute, Western Infirmary, University of Glasgow.

The "Progress" Study into Prevention of Stroke. Professor John Reid.

British Standards Institute, London

Revision of standards for sphygmomanometers. Chairman: Professor E. O'Brien

GERMANY

PTB, Berlin

TC-10/WG 205 Committee for Directive for Blood pressure Measuring Devices. Chairman. Dr. S. Mieke.

ITALY

University of Milan, Milan

1. Concerted Action Programme. *New approach to neural alterations. The NEAR Study.* Dr. Gian Franco Parati
2. Organisation of 5th Consensus Meeting on 24-hour ambulatory measurement. Professor Giuseppe Mancia

Ospedale Generale Regionale "R. Silvestrini". Perugia.

3. PIUMA database analysis. Dr. Paulo Verdecchia

BELGIUM

Catholic University of Leuven

1. Concerted Action Programme: *Isolated Systolic Hypertension in the Elderly. Blood Pressure Unit Co-ordinating Centre for Ambulatory Measurement Side-Project.* - Dr. Jan Staessen and Professor Robert Fagard.
2. APTH Study: *Ambulatory blood pressure in the treatment of hypertension.* Dr. Jan Staessen and Professor Robert Fagard

3. TOPH *Home Pressure and Treatment of Hypertension*. Dr. Jan Staessen and Professor Robert Fagard

University of Gent

Office versus ambulatory blood pressure in the management of hypertension - Professor Denis Clement

U.S.A.

New York University and Cornell Hospital

AIB Study, Phase II: *Ambulatory blood pressure and end-organ changes* - Professor Dick Devereux

Food and Drug Administration. US.

Peak-to-trough analysis in Syst-Eur Study. Dr. Raymons Lipicky, Professor Willem Birkenhager, Dr. Jan Stassen and E. O'Brien.

HOLLAND

T.M.O Amsterdam

Validation of the Finapres. Professor Gert Van Montfrans and Dr. Karel Wesseling

University of Maastricht

Analysis of BPU data base. Professor Peter De Leeuw, and Sergio Rodriguiz

SWITZERLAND

University of Lausanne

1. Profilomat development. Professor Hans Brunner and Dr. Bernard Waeber.
2. Development of data base for Inhibace Study. Dr. T. Bart

FRANCE

Universities of Grenoble and Paris

Perindopril/indapamide study on arterial tonometry and pulse wave velocity. Professor Michel Safar and Professor Jean-Michel Mallion

SWEDEN

University of Gothenburg

Blood Pressure Unit, Dublin. Co-ordinating Centre for Ambulatory Measurement Sub-Project.
Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Factorial Study of the Prevention of Coronary Heart Diseases and Vascular Events by Blood Pressure Lowering (comparing β -blocker based with amlodipine based therapy) and by Blood Cholesterol Lowering (comparing Atorvastatin with placebo) in 18,000 patients. Professor Björn Dahlöf

AUSTRALIA

St. Vincent's Hospital, Sydney

Pulse wave form as an end organ in hypertension. Professor Michael O'Rourke

NEW ZEALAND

University of Auckland, Auckland

The "Progress" Study into Prevention of Stroke. Dr. Stephen MacMahon

EDITORIAL BOARD MEMBERSHIP

Journal of Human Hypertension: E. O'Brien

Journal of Hypertension: E. O'Brien

High Blood Pressure and Cardiovascular Prevention: E. O'Brien

Blood Pressure: K. O'Malley & E. O'Brien

Blood Pressure Monitoring: E. O'Brien

The Recorder: E. O'Brien

COMMITTEE MEMBERSHIP

Working Party on Blood Pressure Measurement. *British hypertension Society.* E. O'Brien, Chairman. F. Mee

HCC/10 Committee for the revision of standards for mercury and aneroid sphygmomanometers. *British Standards Institute.* E. O'Brien, Chairman

CEN/TC205 EEC Committee for Non-active medical devices. E. O'Brien

Executive Committee. *British Hypertension Society.* K. O'Malley

Steering Committee. *European Study of Systolic Hypertension in the Elderly (Syst-Eur).* E. O'Brien

Side-project on Ambulatory Measurement. *European Study of Systolic Hypertension in the Elderly (Syst-Eur).* E. O'Brien

Steering Committee. *European Study of Ambulatory Blood Pressure Measurement.* E. O'Brien

Irish Medicines Board. D. Fitzgerald.

Steering Committee. British Hypertension in the Very Elderly Trial (BHET). J. Duggan

Council for High Blood Pressure. Professor E. O'Brien, Chairman.

Nurses Hypertension Association. F. Mee.

Nurses Cardiovascular Association. F. Mee, Chairman.

New York Academy of Sciences. E. O'Brien

Steering Committee. TOPH (Home Pressure and Treatment of Hypertension) Study. E. O'Brien.

Steering Committee Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT): E. O'Brien

Sub-study Committee. Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT): E. O'Brien, Chairman

