THE BLOOD PRESSURE UNIT
&
ADAPT CENTRE

Beaumont Hospital

ANNUAL REPORT, PUBLICATIONS
AND
SCIENTIFIC PRESENTATIONS

1999
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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.

The Arterial Disease Assessment Prevention and Treatment (ADAPT) Clinic was established in collaboration with Professor David Bouchier-Hayes and Professor Desmond Fitzgerald in 1997. The rationale for this unique clinic was based on the concept that disease of the arterial organ was a fundamental denominator in all cardiovascular disease, and acknowledgment that by concentrating resources on the target organs, the central organ, the arterial tree, was often neglected. The ADAPT Clinic was established to ensure that all patients with cardiovascular disease, regardless of the speciality to which they presented, received the most comprehensive risk factor assessment with appropriate lifestyle modification, and that appropriate drug treatment would be directed at the arterial organ.

The ADAPT concept was further developed in 1999 with the establishment of the ADAPT Centre. This cardiovascular laboratory is equipped to perform state-of-the-art cardiovascular assessment, which includes echocardiography – 3D and M-mode - electrocardiography with stress testing, Holter monitoring, applanation tonometry, pulse wave velocity analysis, 24-hour ABPM, 24-hour silent ischaemia monitoring, fundal photography and imaging, and carotid intimal imaging. Through its association with BIOSYS at RCSI, the Laboratory can assess biochemical markers of risk and assess endothelial function.

The ADAPT centre is under the direction of Professor O’Brien. Senior staff include Professor Desmond Fitzgrald, Professor David Bouchier-Hayes, Dr. J. Duggan, Dr. Alice Stanton and Dr. Dermot Kenny, and the Centre is staffed by 3 research registrars, 8 research nurses, a technician, computer analyst and 2 secretaries. As a consequence of the ADAPT facility the out-patient service continued to grow with nearly 5,000 patients attending the Blood Pressure, Lipid, Cardiac and the ADAPT Clinics.

In 1999 the Blood Pressure Unit continued to contribute to hypertension research, publishing 25 scientific papers, and delivering research presentations at home, in the UK, France, Italy, Belgium, Austria, the United States and New Zealand (where I was invited to give the Gaston Bauer Lecture).

The Unit continued to participate in a number of important international collaborative studies, which included the Syst-Eur, OvA, TOHP, HYVET and PROGRESS studies. The Unit participated in collaborative research with a number of institutions and universities abroad; these included St. Mary’s Hospital, London, the University of Louvain, the University of Ghent, the Hammersmith Hospital, Glasgow University, the University of Auckland, and Cornell Hospital in New York.
The Unit continued recruiting patients for the Anglo-Scandinavian Cardiovascular Outcome Trial (ASCOT), the largest international endeavour in which the Unit has participated. ASCOT will recruit a total of 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. Dr. Alice Stanton supervised a team of doctors and nurses specially recruited for the ASCOT programme. During the year she was joined on the ASCOT team by Dr. Helen Power, Nurses Hilda O’Neill, Janette McGovern and Noreen Molony and Ms Barabara Gallagher. I am a member of the ASCOT Steering Committee and Chairman of the ASCOT Sub-study Committee, which is supervising 21 sub-studies, and Professor Desmond Fitzgerald and Dr. Alice Stanton are members of the Genetics Committee. All the biochemistry and the storage of genetic samples are being carried out by newly created facilities in the Royal College of Surgeons.

I continued to act during the year as Chairman of the working parties on blood pressure measurement of the British Hypertension Society, of the British Standards Institution, and of the European Society of Hypertension. I also continued in my role as Chairman of the Irish Heart Foundation Council on High Blood Pressure, and as a member of the EU Standards Committee on Blood Pressure Measurement, and as a member of the Association for the Advancement of Medical Instrumentation in the US.

The research outlined in this report was facilitated by a grant from the Charitable Infirmary Charitable Trust which has given valuable support to the Unit over many years and without which its achievements would not have been possible. I would like to thank Mr. P Lyons, Mr. L. Duffy and Mr. D. Browne who supported and facilitated the establishment of the ADAPT Centre. I would like to pay tribute to the diligence and loyalty of all the staff in the Blood Pressure Unit and the ADAPT Centre, characteristics, which facilitate the team approach so necessary in scientific research. Finally, I 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

31/12/1999
The Blood Pressure Unit & ADAPT Centre

Staff 1999

Medical
Professor Eoin O'Brien  Dr. Charlotte Cribben
Professor Desmond Fitzgerald  Dr. Louis Keary
Dr. Joseph Duggan  Dr. Sineal Gupta
Dr. Alice Stanton  Dr. Helen Power
Dr. Dermot Kenny

Blood Pressure Unit Nursing
Sister Fáinsía Mee  Nurse Cora McKiernan
Nurse Caroline Wilson  Nurse Geraldine McCarthy

ADAPT Centre Nursing
Nurse Hilda O’Neill  Nurse Dáire Ryan
Nurse Ruth Nallon  Nurse Noreen Moloney
Nurse Elizabeth Kinsella  Nurse Jeanette McGovern
Nurse Elaine McHale  Mary Rowley

Technical
Mr. Simon Lyons  Ms Una Mulligan
Echocardiographer  Dietician
Mr. Neil Atkins
Computer Analyst

Secretarial
Ms Valerie Hughes  Ms Aileen Doyle
Ms Barbara Gallagher  Ms Ann Grady
PUBLICATIONS

in

1999
Scientific papers


Publications in 1999


Editorials


Letters


Book Chapters


Books and booklets


Abstracts


**General and Educational**


**SCIENTIFIC AND EDUCATIONAL COMMUNICATIONS 1999**

Irish College of General Practitioners. Dun Laoghaire Faculty. 19th January 1999.

- O’Brien E. *Recent Advances in the Diagnosis of Hypertension*

RCSI Annual Research Day. RCSI. Dublin. 7th April 1999.

- G. Mansfield, P. Owens, N. Atkins, E. O’Brien. What is the importance of Inter-arm differences in blood pressure?


- O’Brien E. *The ADAPT (Arterial Disease Assessment Prevention & Treatment) Clinic: Concentrating on the Arterial Tree Rather Than the Target Organ.* Invited Lecture to session: *New Predictors of Risk.* 1st May 1998


- O’Brien E. Devices and Validation.

**Ninth European Meeting on Hypertension. University of Milan. 11-15th June 1999.**


- Workshop at ESH. Chairman: E. O’Brien

Cardiac Society of Australia and New Zealand (CSANZ). Annual Scientific Meeting. Wellington. New Zealand. 7-11 August 1999

- O’Brien E. From Wit and Humour to the Heart in Irish Medicine

ASCOT Educational Seminar. Dublin. 10th September 1999.

- O’Brien E. Ambulatory blood pressure measurement.

O’Brien E. Ambulatory blood pressure monitoring: what’s new?


- Atkins N, O’Brien E. Towards a simpler and common protocol for the validation of blood pressure measuring devices.

ASCOT Educational Seminar, Dublin. 17th September 1999.

- O’Brien E. Ambulatory blood pressure measurement.

The Leuven Consensus Conference on Ambulatory Blood Pressure Monitoring, Leuven. 23-25th September 1999

- O’Brien E. Task Force II. Population Studies: Experience form the AIB Study

Chairman: E. O’Brien

- O’Brien E. Unifying arterial management: the ADAPT Clinic
- Stanton A. Haemodyanamics, wall mechanics and atheroma
- Fitzgerald D. Platelet vessel wall interactions


- O’Brien E. Advances in validation methodology.


- O’Brien E. A century of poor blood pressure control.

Norwegian Society of Nephrology. London. UK. 10th December 1999

- O’Brien E. Can we live without ABPM?
# CURRENT RESEARCH PROJECTS & COLLABORATIVE CENTRES

## I. BLOOD PRESSURE MEASUREMENT

<table>
<thead>
<tr>
<th>Project title</th>
<th>Description</th>
<th>Investigators</th>
<th>Collaborating centres</th>
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<tbody>
<tr>
<td>TOPH Study. Home Pressure and Treatment of Hypertension</td>
<td>Project to measure home blood pressure and treatment of hypertension.</td>
<td>E. O’Brien and J. Staessen,</td>
<td>Catholic University of Leuven, BELGIUM.</td>
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<tr>
<td></td>
<td></td>
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<td>Zeneca Ltd., IRELAND.</td>
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<tr>
<td>Assessment of Korotkoff Sounds</td>
<td>Project to assess Korotkoff sounds.</td>
<td>E. O’Brien, P. Owens, N. Atkins, P. Healy.</td>
<td>Kevin Street College of Technology, IRELAND</td>
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<td>Royal College of Surgeons, IRELAND</td>
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<tr>
<td>Comparison of arterial tonometry and pulse wave velocity</td>
<td>Project to compare arterial tonometry and pulse wave velocity.</td>
<td>P. Owens, S. Lyons, D. Ryan, E. O’Brien, B. Williams, M. O’Rourke.</td>
<td>Leicester University, UK</td>
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<td></td>
<td></td>
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<td>St. Vincent’s Hospital, Sydney</td>
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<tr>
<td>Device validations according to BHS/AAMI standards</td>
<td>Project to validate devices according to BHS/AAMI standards.</td>
<td>E. O’Brien, F. Mee, N. Atkins.</td>
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<tr>
<td>Recommendations on Blood Pressure Measurement</td>
<td>Project to recommend blood pressure measurement.</td>
<td>E. O’Brien and others.</td>
<td>British Hypertension Society, UK</td>
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<td></td>
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<td>British Standards Institute, UK</td>
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<td>DHSS, UK</td>
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<td>EU Standards Committee, GERMANY</td>
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<td>European Society of Hypertension, HOLLAND</td>
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<td>Council on High Blood Pressure, IRELAND</td>
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<td>TNO, HOLLAND</td>
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<td>Food and Drug Administration, US</td>
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## II. AMBULATORY BLOOD PRESSURE MEASUREMENT

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<tr>
<th>Project title</th>
<th>Description</th>
<th>Investigators</th>
<th>Collaborating centres</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Allied Irish Bank, Ballsbridge, DUBLIN</td>
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<td></td>
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<td>Catholic University of Leuven, BELGIUM</td>
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<td>Cornell University, New York, USA</td>
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<td>Royal College of Surgeons, IRELAND</td>
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<td>Charitable Infirmary Charitable Trust, IRELAND</td>
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Irish Heart Foundation, IRELAND

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<thead>
<tr>
<th>Project title:</th>
<th>OvA Study: Office versus A BPM in management of hypertension.</th>
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<tbody>
<tr>
<td>Investigators:</td>
<td>E. O’Brien and D. Clement.</td>
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<tr>
<td>Collaborating centres:</td>
<td>University of Gent, BELGIUM.</td>
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<tr>
<th>Project title:</th>
<th>Recommendations for Ambulatory Blood Pressure Measurement.</th>
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<tr>
<th>Project title:</th>
<th>Analysis of Blood Pressure Unit data base.</th>
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<tr>
<td>Collaborating centres:</td>
<td>University of Maastricht, THE NETHERLANDS</td>
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<tr>
<th>Project title:</th>
<th>Ambulatory blood pressure and mortality.</th>
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<td>Collaborating centres:</td>
<td>Registrar of Deaths, Joyce House, Dublin, IRELAND</td>
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<tr>
<th>Project title:</th>
<th>The NEAR Study. New approaches to neural alterations.</th>
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<tr>
<td>Investigators:</td>
<td>E. O’Brien, A. Zanchetti, G. Parati</td>
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<td>Collaborating centres:</td>
<td>‘University of Milan, ITALY</td>
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### III. HYPERTENSION IN THE ELDERLY

<table>
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<tr>
<th>Project title:</th>
<th>Isolated Systolic Hypertension in the Elderly: The SYST-EUR Phase II Study</th>
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<tbody>
<tr>
<td>Collaborating centres:</td>
<td>Catholic University of Leuven, BELGIUM.</td>
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<tr>
<th>Project title:</th>
<th>The HYVET Study. Hypertension in the Very Elderly</th>
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<tbody>
<tr>
<td>Investigators:</td>
<td>J. Duggan, E. O’Brien and C Bulpitt</td>
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<tr>
<td>Collaborating centres:</td>
<td>Hammersmith Hospital, London., UK.</td>
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<tr>
<th>Project title:</th>
<th>Target organ status in elderly patients with hypertension.</th>
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<td>Collaborating centres:</td>
<td>James Connolly Memorial Hospital</td>
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<th>Project title:</th>
<th>The PROGRESS (Perindopril Protection Against Recurrent Stroke) Study.</th>
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<tr>
<td>Collaborating centres:</td>
<td>Western Infirmary, Glasgow, UK University of Auckland, NEW ZEALAND</td>
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<thead>
<tr>
<th>Project title:</th>
<th>Blood Pressure in elderly patients in different health states.</th>
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</table>
Collaborating centres: James Connolly Memorial Hospital, IRELAND
Royal College of Surgeons, IRELAND

IV. DRUG TREATMENT OF HYPERTENSION

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Main Study*
Collaborating centres: St. Mary’s Hospital, London, UK
Imperial College, London, UK
University of Göteborg, SWEDEN
Royal College of Surgeons, IRELAND

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Sub-study: ABPM in ASCOT*
Collaborating centres: St. Mary’s Hospital, London, UK
St. Bartholomew’s Hospital, London, UK.
Western Infirmary, Glasgow, UK

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Sub-study: Silent Ischaemia in ASCOT*
Collaborating centres: St. Mary’s Hospital, London, UK

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Sub-study: Omron Audit in ASCOT*
Collaborating centres: St. Mary’s Hospital, London, UK

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Sub-study: Tonometry in ASCOT*
Collaborating centres: Leicester University, UK

Project title: *Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT). Genetic/Phenotyping Sub-study*
Collaborating centres: St. Mary’s Hospital, London, UK
Imperial College, London, UK
Royal College of Surgeons, IRELAND

Project title: *Perindopril/indapamide study on arterial Tonometry and pulse wave velocity.*
Collaborating centres: University of Grenoble, FRANCE
Servier Laboratories, FRANCE and IRELAND
### V. COMPUTERISED SYSTEMS FOR OUT-PATIENT MANAGEMENT

**Project title:** Development of Computerised systems for Out-patient Management – the DABL and ADAPT Programmes

**Investigators:** N. Atkins, E. O’Brien, D. Bouchier-Hayes, W. Rickard

**Collaborating centres:** Department of Surgery, Royal College of Surgeons, IRELAND
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: E. O'Brien
Blood Pressure Monitoring: E. O'Brien
The Recorder: E. O'Brien

COMMITTEE MEMBERSHIP

Working Group on Blood Pressure Measurement. European Society of Hypertension
E. O'Brien. Chairman

E. O'Brien. Chairman.

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

Association for the Advancement of Medical Instrumentation (AAMI), Arlington, US
E. O'Brien. Individual Liason Member

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 on High Blood Pressure. Professor E. O'Brien, Chairman. A. Stanton

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