All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording and/or otherwise, without the prior written permission of the publishers.

Published in 1996 by the Cancer Research Campaign, 10 Cambridge Terrace London NW1 4JL

#### **British Library Cataloguing in Publication Data**

A catalogue record for this book has been applied for from the British Library

ISBN 0-9508422-2-2

Typeset by Elite Typesetting Techniques, Eastleigh, Hants Printed in Great Britain by Latimer Trend Company Ltd, Plymouth, Devon

#### THE PROCEEDINGS OF THE CANCER RESEARCH CAMPAIGN/ DEPARTMENT OF HEALTH SYMPOSIUM ON

# **CANCER AND MINORITY ETHNIC GROUPS**

# Held at Regents Park College, London 4th May 1995

Edited by

#### Jean King Head of Education Cancer Research Campaign, London

Veena Bahl

Adviser in Ethnic Minority Health Department of Health, London

and

#### **Peter Selby**

Professor of Cancer Medicine ICRF Cancer Medicine Research Unit University of Leeds Centre for Cancer Research, Leeds





# **British Journal of Cancer**

**Editor-in-Chief** 

GE Adams Didcot, Oxon

#### **Subject Editors**

Clinical Oncology SB Kaye Glasgow Epidemiology LJ Kinlen Oxford Pathology D Wynford-Thomas Cardiff Cell and Molecular Biology EG Wright Didcot, Oxon Experimental Therapeutics GE Adams Didcot, Oxon

#### **EDITORIAL BOARD**

Chairman DG Harnden Manchester

K Alitalo - Helsinki DM Barnes - London M Baum - London DT Bishop – Leeds A-L Børresen – Oslo P Boyle – Milan HJ Broxterman - Amsterdam J Cassidy - Aberdeen TA Connors - Sutton TG Cooke - Glasgow D Crowther - Manchester J Cuzick - London M D'Incalci - Milan J-P Droz - Lyon MJ Embleton - Manchester B Franc – Boulogne P Gallimore - Birmingham PA Hall – Dundee

Catherine O'Hara – Didcot, Oxon Jackie McMinn – Didcot, Oxon SR Hamilton - Baltimore KR Harrap - Sutton AL Harris – Oxford IR Hart - London J Hickman – Manchester A Horwich - Sutton DK Hossfeld - Hamburg N Hynes - Basel LJ Kinlen - Oxford NR Lemoine - London RCF Leonard - Edinburgh LA Liotta – Bethesda TA Lister - London D Machin – Cambridge JG McVie - London D Metcalf – Melbourne WR Miller – Edinburgh JV Moore - Manchester

M Piccart – Brussels M Pignatelli – London B Ponder – Cambridge J Pritchard - London JE Roulston – Edinburgh N Saijo - Tokyo PJ Selby - Leeds RL Souhami - London WP Steward - Ontario IF Tannock - Toronto JM Trent - Ann Arbor PR Twentyman - Cambridge V Van Heyningen – Edinburgh J Verweij - Rotterdam NJ Wald - London P Workman - Macclesfield JA Wyke - Glasgow

#### **Editorial Assistants**

Sandra Hooper – Cardiff Jenny Bailey – Didcot, Oxon Phyllis Scott – Glasgow Janette Wallis – Oxford





The *British Journal of Cancer* is published twice monthly on behalf of the *Cancer Research Campaign* by Stockton Press, a division of Macmillan Press Ltd.

**Scope** The *British Journal of Cancer* will consider papers which contain new information, constitute a distinct contribution to knowledge, and are relevant to the clinical, epidemiological, pathological or molecular aspects of oncology.

This journal is covered by Excerpta Medica, Current Advances in Genetics and Molecular Biology, Current Contents, Medline, Index Medicus, Index to Scientific Reviews and Science Citation Index.

Editorial Manuscripts (plus three copies) and all editorial correspondence should be sent to : Professor GE Adams, Editorial Office, British Journal of Cancer, MRC Radiobiology Unit, Chilton, Didcot, Oxfordshire OX11 0RD, UK.

Tel: +44 (0) 1235 832141. Fax: +44 (0) 1235 832142.

Advertisements Enquiries concerning advertisements should be addressed to: Michael Rowley, Hasler House, High Street, Great Dunmow, Essex, CM6 1AP, UK. Tel: +44 (0) 1371 874613. Fax: +44 (0) 1371 872273.

**Publisher** All business correspondence and reprint requests should be addressed to *British Journal of Cancer*, Stockton Press, Houndmills, Basingstoke, Hampshire RG21 6XS, UK. Tel: +44 (0) 1256 29242. Fax: +44 (0) 1256 810526. Publisher: Jayne Marks Production Controller: Debbie Cole Supplement Editor: Alice Ellingham Supplement Production Controller: Simone Larché

Subscriptions – EU/Rest of World Subscription price per annum (two volumes, 24 issues), EU £430, rest of the world £470 (surface), £560 (airmail), or equivalent in any other currency. Orders must be accompanied by remittance. Cheques should be made payable to *Macmillan Magazines* and sent to: The Subscription Department, Macmillan Press Ltd, Houndmills, Basingstoke, Hampshire, RG21 6XS, UK. Where appropriate, subscribers may make payments into UK Post Office Giro Account No. 519 2455. Full details must accompany the payment. Subscribers from EU territories should add sales tax at the local rate.

Subscriptions – USA USA subscribers call toll free 1-800-221 2123 or send check/money order/credit card details to: Stockton Press, 345 Park Avenue South, 10th Floor, New York, NY 10010-1707. Tel: +1 212 689 9200. Fax: +1 212 689 9711. USA annual subscription rates (institutional/corporate): \$745 (surface), \$890 (airmail). Prices are set in UK Sterling. Dollar prices are converted to UK Sterling at the current exchange rate. Accordingly, your credit card charge may vary slightly from the dollar rate shown. To obtain the exact dollar rate shown above, please remit by check. All prices are subject to change without notice.

The British Journal of Cancer (ISSN 0007-0920) is published twice a month by Macmillan Press Ltd. c/o Mercury Airfreight International Ltd, 2323 Randolph Avenue, Avenel, NJ 07001, USA. Subscription price for institutions is \$890 per annum. 2nd class postage is paid at Rahway NJ. Postmaster: send address corrections to Macmillan Press Ltd, c/o Mercury Airfreight International Ltd, 2323 Randolph Avenue, Avenel, NJ 07001, USA

**Reprints** of any article in this journal are available from Stockton Press, Houndmills, Basingstoke, Hampshire RG21 6XS, UK. Tel: +44 (0) 1256 29242. Fax: +44 (0) 1256 810526.

Copyright © 1996 Cancer Research Campaign ISSN 0007-0920

All rights of reproduction are reserved in respect of all papers, articles, illustrations, etc, published in this journal in all countries of the world.

All material published in this journal is protected by copyright, which covers exclusive rights to reproduce and distribute the material. No material published in this journal may be reproduced or stored on microfilm or in electronic, optical or magnetic form without the written authorisation of the Publisher.

Authorisation to photocopy items for internal or personal use of specific clients, is granted by Stockton Press, for libraries and other users registered with the Copyright Clearance Centre (CCC) Transaction Reporting Service, provided that the base fee of \$12.00 per copy is paid directly to CCC, 21 Congress St, Salem, MA 01970, USA 0007-0920/96 \$12.00 + \$0.00

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patent Act 1988, this publication may be reproduced, stored or transmitted, in any form or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction, in accordance with the terms of licenses issued by the Copyright Licensing Agency.

Whilst every effort is made by the publishers and editorial board to see that no inaccurate or misleading data, opinion or statement appears in this Journal, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor or advertiser concerned. Accordingly, the publishers and the Cancer Research Campaign, the editorial committee and their respective employees, officers and agents accept no liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement. Whilst every effort is made to ensure that drug doses and other quantities are presented accurately, readers are advised that new methods and techniques involving drug usage, and described within this Journal, should only be followed in conjunction with the drug manufacturer's own published literature.

# **FOREWORD**

The Department of Health has, through its Health of the Nation initiative, identified cancer as a key area for targeted improvements in morbidity and mortality rates. The Department is charged with seeking effective ways of achieving these targets among black and minority ethnic groups in England and has funded a number of projects to develop this area.

The Cancer Research Campaign has a broad and longstanding programme of research into all aspects of cancer. The Campaign's Education and Psychosocial Research Committee, in reviewing it's priorities, identified the needs of minority ethnic people as a neglected area. Hence discussions between the Department and the Campaign led to a jointly sponsored symposium to begin to set the agenda for the cancer research needs of minority ethnic groups in the UK.

A number of priorities and practical proposals emerged during discussions at the symposium and these are presented in the following pages.

It is the hope of both the Department and the Campaign that this publication will raise awareness of minority ethnic needs among the cancer research community, and of cancer issues among health care professionals, community workers and researchers from minority ethnic groups and that collaborations in some of the priority areas identified can be established. We see this publication as a starting point for establishing the research and development agenda on cancer and minority ethnic groups in England.

umbstege

The Baroness Cumberlege Parliamentary Under-Secretary of State for Health House of Lords

1 volon Milie

**Professor J Gordon McVie** Director General Cancer Research Campaign

#### **DEDICATION**

This publication is dedicated to the eminent epidemiologist Dr Calum Muir who died shortly after the symposium. A major research interest of his career was the study of cancer in different populations as a means of identifying causes and strategies for prevention.

#### **EDITORS' NOTE**

The symposium on Ethnic Minorities and Cancer which is reported here addressed four general areas: epidemiology, service provision, the community perspective and the future agenda. It was important to consider first of all such cancer statistics as are available for minority ethnic groups, in order to inform the following discussions. The editors recognise that there are difficulties with some of the data presented, due to small sample sizes, inexact classification etc., but this illustrates precisely why the topic of the symposium is so urgent. Good baseline data are essential in order to plan for effective service provision. Service uptake (including education) will be strongly influenced by the beliefs and attitudes held by the various minority ethnic groups, hence the need to consider the community perspective. Finally, participants at the symposium discussed briefly how the many issues identified throughout the day could be taken forward.

The views expressed by contributors are their own and do not necessarily represent the views of the Cancer Research Campaign or the Department of Health.

#### ACKNOWLEDGEMENTS

The Editors are grateful to the following reviewers:

Professor Geoff Hanks, Department of Palliative Medicine, Bristol Oncology Centre Dr Penny Hopwood, CRC Psychological Medicine Research Group, University of Manchester Professor Klim McPherson, Health Promotion Sciences Unit, London School of Hygiene & Tropical Medicine

Professor David Mant, Department of Primary Medical Care, University of Southampton Dr Jane Melia, DHS Screening Evaluation Unit, Institute of Cancer Research also Kate Searle for helping to organise the meeting and subsequent publication.

### **CONTRIBUTORS AND PARTICIPANTS IN THE SYMPOSIUM**

\*indicates authors of papers & speakers at the symposium

<sup>†</sup>indicates authors of papers who were not speakers at the symposium

Dr Karim Admani Dept of Medicine, Rehabilitation & Stroke Unit, Northern General Hospital, Herries Rd, Sheffield S5 7AU \*Dr Liz Allen Health Statistics, Office of Population Censuses & Surveys, St Catherine's House, 10 Kingsway, London WC2B 6JP Razia Aziz Awareness Development Officer, CancerLink, 17 Brittania Street, London WC1X 9JN \*Veena Bahl Adviser on Ethnic Minority Health, Department of Health, Room 412, Wellington House, 133-155 Waterloo Road, London SE1 8UG \*Dr Raman Bedi Unit of Paediatric Dentistry, The School of Dentistry, University of Birmingham, St Chads Queensway, Birmingham B4 6NN \*Professor Raj Bhopal Department of Epidemiology & Public Health, Medical School, University of Newcastle, Framlington Place, Newcastle NE2 4HH Tessa Bogue Assistant Head of Education, Cancer Research Campaign, 10 Cambridge Terrace, London NWI 4JL Dr Kambiz Boomla Chrisp Street Health Centre, 100 Chrisp Street, London E14 Fiona Bower Breast/Cervical Screening Co-ordinator, Camden & Islington Health Authority, Insull Wing, 110 Hampstead Road, London NWI 2LJ Monica Briggs New River Health Authority, 85 Tanners End Lane, London N18 ISB Jos Bruce Communications Department, Cancer Research Campaign, 10 Cambridge Terrace, London NW1 4JL Sandra Cater Breast & Cervical Screening Facilitator, Healthy Eastenders Project, Rm 204 Dept of General Practice, Basic Medical Sciences Block, Queen Mary & Westfield College, Mile End Road, London E1 4NS Dr Anne Charlton Director, CRC Child Study Research Group, Dept of Public Health & Epidemiology, University of Manchester, Stopford Building, Oxford Road, Manchester M13 9PT Veronica Dolan Ealing Hammersmith & Hounslow Health Agency, 1 Armstrong Way, Southall UB2 4SA Dr Isabel dos Santos Silva Dept of Epidemiology & Population Sciences, London School of Hygiene & Tropical Medicine, Keppel Street, London WCIH 7HT Edna Elias 22 Friday Road, Mitcham, Surrey CR4 30J Dr Lesley Fallowfield Director, CRC Communication & Counselling Research Centre, Dept of Oncology, UCL Medical School, Bland Sutton Institute, 48 Riding House Street, London WIP 7PL \*Cecilia Farren HEA Helios Project (Health Education Local Initiatives on Smoking), University of the West of England, Oldbury Court Road, Fishponds, Bristol BS16 2JP Dr Shirley Firth 24 West End Terrace, Winchester SO225EN Carole Furlong New River Health Authority, 85 Tanners End Lane, London N18 ISB \*Jean Gaffin Executive Director, National Council for Hospice & Specialist Palliative Care Services, 59 Bryanston Street, London WIA 2AZ Dr Madeleine Gantley Aldermoor Health Centre, Aldermoor Close, Southampton SO16 5ST Sheila Goff Palliative Care Team, Homerton Hospital, London E9 6SR Ruth Gosen Marie Curie Cancer Care (Education), 17 Grosvenor Crescent, London SW1X 7EE Angela Hall CRC Communication & Counselling Research Centre, Dept of Oncology, UCL Medical School, Bland Sutton Institute, 48 Riding House Street, London WIP 7PL \*Seeromanie Harding Health Statistics, Office of Population Censuses & Surveys, St Catherine's House, 10 Kingsway, London WC2B 6JP Dr Peter Harvey Birmingham Oncology Centre, Queen Elizabeth Hospital, Edgbaston, Birmingham B15 2TH Dr Justin Haslam CRC Psychological Medicine Group, Stanley House, Christie Hospital, Wilmslow Road, Manchester M20 9BX Angela Hayes CancerLink, 17 Brittania Street, London WC1X 9JN Dawn Hill Project Team Leader 'Opening Doors' (National Council for Hospice & Specialist Palliative Care Services), 111 Helix Road, London SW2 2JR \*Dr Tanya Hoare Department of Health Care Studies, Manchester Metropolitan University, Elizabeth Gaskell Campus, Hathersage Road, Manchester M13 0JA Moira Kelly Department of Sociology, Goldsmiths College, Lewisham Way, London SE14 6NW <sup>†</sup>Liz Kernohan Bradford Health, New Mill, Victoria Rd, Salt Aire, Shipley, W Yorks BD18 3LD <sup>†</sup>Jean King Head of Education, Cancer Research Campaign, 10 Cambridge Terrace, London NW1 4JL Dr Sabinder Kumar Aldermoor Health Centre, Aldermoor Close, Southampton SO16 5ST Chiu Laifong Senior Health Promotion Officer on Ethnic Minorities, Rotherham Health Promotion, 1 & 2 Chatham Villas, Chatham Street, Rotherham S65 1DP Dr Sue Latter School of Life & Basic Sciences, The Nightingale Institute, Kings College Hospital, Denmark Hill, London SE5 9RS \*Katherine Luke National Screening Programme, Trent RHA, Fulwood House, Old Fulwood Road, Sheffield S10 3TH Celia Manson Royal College of Nursing, 20 Cavendish Square, London W1M 0AB

**Professor Klim McPherson** (CRC Education & Psychosocial Research Committee), Health Promotion Sciences Unit, Dept of Public Health & Policy, London School of Hygiene & Tropical Medicine, Keppel Street, London WCIE 7HT

**Faisa Mohamed** c/o Mrs Esther Ndlovu, East London & The City Health Promotion Service, Bow House, 153-159 Bow Road, London E3 2SE

**Dr Punam Mongtani** Dept of Epidemiology & Population Sciences, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1H 7HT

<sup>†</sup>Clare Moynihan Academic Dept of Radiotherapy, Royal Marsden Hospital, Downs Road, Sutton Surrey SM2 5PT \*Dr Calum Muir Information & Statistics Division, NHS Scotland Management Executive, Trinity Park House, South Trinity Road, Edinburgh EH5 3SQ

Esther Ndlovu East London & The City Health Promotion Service, Bow House, 153-159 Bow Road, London E3 2SE \*Jennie Naidoo HEA Helios Project (Health Education Local Initiatives on Smoking), University of the West of England, Oldbury Court Road, Fishponds, Bristol BS16 2JP

**Dr Pauline Ong** Centre for Health & Planning Management, Darwin Building, Keele University, Keele, Staffs ST5 5SP

Gillian Parker Nuffield Community Care Studies Unit, University of Leicester, 22-28 Princess Rd West, Leicester LE1 6TP

**Mr KD Patel** Standing Conference of Ethnic Minority Senior Citizens, 5 Westminster Bridge Road, London SE17XW

\*Meena Patel CancerLink, 17 Brittania Street, London WC1X 9JN

Julietta Patnick National Screening Programme, Trent RHA, Fulwood House, Old Fulwood Road, Sheffield S10 3TH

Dr Tim Patterson Rotherham Health Authorities, 220 Badsley Moor, Rotherham S65 2QU

**Dawn Penso** Project Team Leader 'Opening Doors' (National Council for Hospice & Specialist Palliative Care Services), CPW Associates, Cameo House, Bear St, Leicester Square, London WC2H 7AS

<sup>†</sup>Dr Naomi Pfeffer City & Hackney Health Council. 210 Kingsland Road. London E2 8EB

**Dr Hilary Pickles** Royal College of Physicians Research Unit on Cancer, Ealing Hammersmith & Hounslow Health Authority, 1 Armstrong Way, Southall, Mddx UB2 4SA

**Dr J Pillaye** Senior Medical Officer, Health Education Authority, Hamilton House, Mabledon Place, London WC1H 9TX

**Carolyn Pitceathly** CRC Psychological Medicine Group, Stanley House, Christie Hospital, Wilmslow Road, Manchester M20 9BX

**\*Dr Salman Rawaf** Director of Clinical Standards, Merton & Sutton Health Authority, Wilson Hospital, Cranmer Road, Mitcham, Surrey CR4 4TP

Lucy Rees Womens Nationwide Cancer Control Campaign, Suna House, 128/1370 Curtain Road, London EC2A 3AR

Christine Roberts Cragg, Ross, Dawson, 18 Carlisle Street, London WIV 5RJ

Jonathan Roberts Consultant Surgeon, Kings College Hospital, Denmark Hill, London SE5 9RS

Sallie Robins Scientific Affairs, BMA House, Tavistock Square, London WC1H 9JR

**Mr PJ Savla** Standing Conference of Ethnic Minority Senior Citizens, 5 Westminster Bridge Road, London SE1 7XW

Dr Clive Seale Department of Sociology, Goldsmiths College, Lewisham Way, London SE14 6NW

**Mr ED Sealy** Chair, Standing Conference of Ethnic Minority Senior Citizens, 5 Westminster Bridge Road, London SE1 7XW

Kate Searle Education Department, Cancer Research Campaign, 10 Cambridge Terrace, London NW1 4JL

<sup>†</sup>**Professor Peter Selby** ICRF Cancer Medicine Research Unit, St James's University Hospital, Leeds LS9 7TF **\*Dr Tom Sensky** Senior Lecturer in Psychiatry, Charing Cross & Westminster Medical School, West Middlesex University Hospital, Isleworth, Middlesex TW7 6AF

**Leena Sevak** Dept of Epidemiology & Population Sciences, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1H 7HT

**Parveen Sharma** Commission for Racial Equality, Elliott House, 10/12 Allington Street, London SW1E 5EH **Dr Sharon Spencer** Scientific Secretary (Reviews), Cancer Research Campaign, 10 Cambridge Terrace, London NW1 4JL

**Dr Veronica Thomas** CRC Communication & Counselling Research Centre, Dept of Oncology, UCL Medical School, Bland Sutton Institute, 48 Riding House Street, London WIP 7PL

**Jane Toms** CRC Statistician & Factsheets Project Manager, Cancer Research Campaign, 10 Cambridge Terrace, London NWI 4JL

**Dr Lesley Walker** Scientific Secretary (Information), Cancer Research Campaign, 10 Cambridge Terrace, London NW1 4JL

# SUMMARY OF RECOMMENDATIONS

#### **1. Cancer Statistics**

i) A workshop of cancer epidemiologists should be held to identify ways of improving cancer data relating to minority ethnic groups in the light of issues raised in this symposium.

ii) At present, ethnic data are only collected in hospital records. These data should be extended to primary care records, so that uptake of screening etc. may be properly monitored.

#### 2. Research

i) A number of research gaps were identified at the symposium:

- perceptions of health and disease among different ethnic communities
- appropriate methods for delivering effective cancer education to people from minority ethnic groups
- the natural history of cancer among minority ethnic groups
- appropriate methodology for evaluating the outcomes of cancer treatments for different groups, including quality of life and other psychosocial outcomes
- ii) A series of critical literature reviews should be funded, to draw together existing research findings.
- iii) Statutory and voluntary research bodies should take steps to redress the under-representation of minority ethnic interests in their programmes and on their committees

#### 3. Training

Training for health professionals at all levels should include communications skills and awareness of ethnic concerns, in terms both of sensitivity to cultural differences and needs, and of racism at the institutional and individual level.

#### 4. Health Policy

A workshop should be held to identify how existing government policies relating to cancer (such as *Health of the Nation* and the report *A Policy Framework for Commissioning Cancer Services*) can be adapted to address minority ethnic issues. The workshop should also seek to develop a model for incorporating such issues from the outset when policies are being formulated.

## TERMINOLOGY

Wherever possible in the following papers and reports of discussions the precise ethnic identity of the people referred to is specified or enough information is given for the reader to infer this. However, where studies are quoted which have used non-specific, inappropriate or even unacceptable terms, these terms are retained because of the difficulty in assigning more concise definitions and because of the danger of misrepresenting the authors' intentions. The editors have deemed it preferable to ensure that research findings are reported as accurately as possible than to impose their own best guess as to which groups of people are being referred to.

The editors recognise the following preferred generic terms for people of different ethnic backgrounds in England:

Black and minority ethnic people (groups/communities)	
South Asian	people whose ancestry is in the Indian sub-continent <sup>1</sup>
East Asian/ South East Asian	people from the Far East <sup>2</sup> /South East Asian countries respectively
African Caribbean	people of African descent from the Caribbean
African	people whose ancestry is in the African continent
White	people from the majority population whose ancestry lies in Europe (unless
	specified, may include minorities such as Irish)

The editors recognise the limitations of these generic terms and that clasification by ethnic origin remains an imprecise art. In studies, individuals should be asked to assign themselves to the group they feel is most appropriate.

<sup>1</sup> Indian subcontinent: including India, Pakistan, Nepal, Bangladesh, Sri Lanka

<sup>&</sup>lt;sup>2</sup> Far East: China, Japan etc.

#### **Notice to Contributors**

The criteria for acceptance of manuscripts to be published in the British Journal of Cancer are originality and high scientific quality. Manuscripts are accepted on the understanding that they report unpublished work that is not under consideration for publication elsewhere, that all named authors have agreed to its submission and that if accepted it will not be published in the same form, in any language, without the consent of the Publishers. Papers should be in English. Authors whose mother-tongue is not English are urgently requested to have their manuscripts checked for linguistic correctness before submission. The Editors reserve the right to make literary corrections.

Papers reporting clinical studies should, where appropriate, contain a statement that they have been carried out with ethical committee approval. Single case studies are not usually acceptable. Papers disregarding the welfare of experimental animals will be rejected. Authors may find the UKC-CCR 'Guidelines for the Welfare of Animals in Experimental Neoplasia' helpful in this regard. These were published in the British Journal of Cancer (1988) **58**, pp. 109–113. Alternatively, copies may be obtained from: UKCCCR, P.O. Box 123, Lincoln's Inn Fields, London WC2A 3PX, UK.

**Manuscripts** should be sent in quadruplicate (original plus three copies) to the Editor-in-Chief, Professor Ged Adams. They should be typewritten, double-spaced with a wide margin and on one side of the paper only. They should be accompanied by a title page numbered as 1, bearing title, authors' full names, affiliation and complete addresses, including postal (zip) codes; and a summary of not more than 200 words. A list of 3–6 keywords should follow the summary. The author and address to whom correspondence, proofs and reprint requests are to be sent should be clearly indicated.

A series of Editorials explaining the editorial policies and practices of the British Journal of Cancer was published in the Journal between November 1990 and March 1991. Composite reprints of these articles are available from the Editorin-Chief on request.

- Full papers should be divided into sections:
- 1. Introduction
- 2. Materials and methods
- 3. Results
- 4. Discussion
- 5. Acknowledgements and References.

Short Communications ( $\sim 1500$  words) should have the above section headings and a brief summary ( $\sim 50$  words).

**Titles** These are most important; authors should compose them with great care. They should combine brevity with clarity; the shorter the better, not exceeding 100 letters. Authors should submit their own *running title*, which must not exceed 50 letters.

References Only papers closely related to the author's work should be quoted, and these should where possible be original papers rather than reviews. Exhaustive lists should be avoided. Citation of Conference Proceeding or Meeting Abstracts should also be avoided unless there is no other reference. References in the text should be made by giving the author's surname, with the year of publication in brackets. When the reference is to a specific part of a book, the page number should also be cited. When reference is made to a work by 3 or more authors, the first name followed by et al. should be used on all occasions. If several papers by the same first author and from the same year are cited, a, b, c, etc. should be added after the year of publication. It is the author's responsibility to check the accuracy of all references before submitting a manuscript. References should be brought together at the end of the paper in alphabetical order, where titles of papers and all authors' names should be given in full. Names of journals should be abbreviated as in the Index Medicus, but with full stops after abbreviations (but not after authors' initials), followed by the volume number and the initial and final page numbers, eg:

McMANUS MJ, DOMBROSKE SE, PIENKOWSKI MM AND WILSON AB. (1978). Successful transplantation of human benign breast tumours into the athymic nude mouse and demonstration of enhanced DNA synthesis by human placental lactogen. *Cancer Res.*, **38**, 2243–2248.

References to books and monographs should appear as in the following examples:

- MEANS JH. (1984). The Thyroid and its Diseases. Lippincott: Philadelphia.
- STEVENSON AC. (1966). Sex chromatin and sex ratio in man. In *Sex Chromatin*, Moore A. (ed) pp.405-425. W.B. Saunders: Philadelphia.

Abbreviations and units should follow the standards laid down in *Units Symbols and Abbreviations* published by the Royal Society of Medicine (third edition, 1977).

Drug names Generic names should be used.

Figures In the text Arabic numbers should be used and all illustrations should be specifically referred to in the text, e.g. (Figure 2). All illustrations should be submitted at about  $1\frac{1}{2}$ times the intended final size and should be numbered as figures whether they are photographs, representational drawings or line diagrams and graphs. Copies of all Figures must accompany each of the 4 submitted copies of the manuscript. Photographs and photomicrographs should be unmounted glossy prints, should not be retouched, and should be chosen to exclude technical artefacts. Magnification should be indicated by a line representing a defined length included within the photograph. Areas of key interest and/or critical reproduction should be indicated on a flimsy overlay attached to the photograph or on a photocopy. All annotation and lettering should be indicated in the same way, and preferably not included on the original print. Clearly contrasted and focused prints are essential for adequate reproduction. Four originals of all photographs must be submitted. Photocopies of half-tone illustrations are generally unsuitable for refereeing purposes.

**Full colour illustrations** may be included within the text, at the discretion of the Editor-in-Chief. However, a charge will be made to the author to cover the extra costs incurred in originating and printing of colour illustrations. Authors will be advised of any such charges, which depend on the size and quantity of colour illustrations, prior to publication.

Line diagrams and graphs should be on separate sheets; they must be drawn with black ink on white paper or represent computer-generated output printed using laser or ink jet printers with appropriate line-smoothing facilities. Lettering on figures should be minimal and must not duplicate the legend. The use of symbols should be consistent within papers, and explanation of symbols should be included in the caption, not on the figure. Symbols should be sufficiently large that they will be clearly discernible following reduction. Tables These should be as few as possible and should present only essential data. They should be typewritten on separate sheets, have a title or caption, and given Arabic numbers.

**Proofs** Two marked copies of the proofs will be sent to the principal author and should be read carefully for errors. One corrected copy must be returned to the Editor-in-Chief within 3 days. Major alterations to the text cannot be accepted. **Copyright Assignment** The principal author must complete and return to the Publisher the Copyright Assignment Form enclosed with the proofs.

**Offprints** Twenty-five offprints will be supplied free of charge to the principal author. Additional offprints may be ordered on the form accompanying proofs. The charges are necessarily higher if orders are received after the issue has gone to press.

\*Editorial correspondence (other than in direct response to a communication from one of the Subject Editors) should be addressed to Professor GE Adams, Editorial Office, British Journal of Cancer, MRC Radiobiology Unit, Chilton, Didcot, Oxfordshire OX11 0RD, UK.