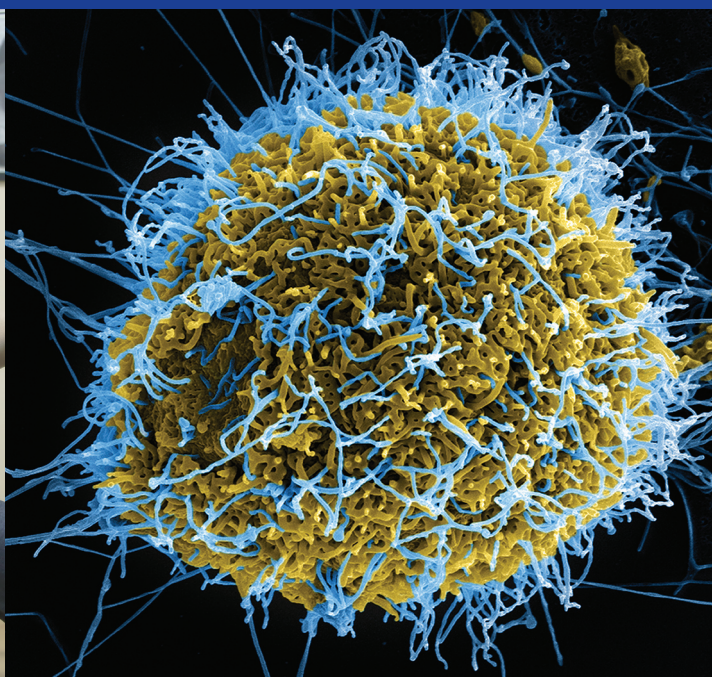


EPIDEMIOLOGY & **INFECTION**

journals.cambridge.org/hyg



Submit your paper online
<http://mc.manuscriptcentral.com/hyg>

CAMBRIDGE
UNIVERSITY PRESS

Epidemiology and Infection

SENIOR EDITOR/MANAGING EDITOR

Professor Norman Noah
*London School of Hygiene and Tropical Medicine, Keppel Street,
London WC1E 7HT, UK*

EDITORIAL ASSISTANT

Veronika Aurens
*London School of Hygiene and Tropical Medicine, Keppel Street,
London WC1E 7HT, UK*

EDITORS

Professor Paolo Bonanni
Department of Health Sciences, Florence, Italy

Dr Andrew Breed
Animal and Plant Health Agency (APHA), UK

Dr Michael Lynch
*US Centers for Disease Control and Prevention, Atlanta,
Georgia, USA*

Dr Shannon Majowicz
School of Public Health and Health Systems, Waterloo, Ontario, Canada

Professor Eduardo Massad
School of Medicine, Sao Paulo, Brazil

Dr Tyrone L. Pitt
NHS Blood & Transplant, London, UK

Professor Lucy J. Robertson
Norwegian School of Veterinary Science, Oslo, Norway

Dr Holly Seale
*School of Public Health and Community Medicine, New South Wales,
Sydney, Australia*

Professor Carlos Seas
Cayetano Heredia University, Peru

Professor Katharina Stärk
Royal Veterinary College, North Mymms, UK

Dr Tim Wreghitt
Cambridge, UK

Dr Mark Zuckerman
Kings College Hospital NHS Trust, London, UK

EDITORIAL POLICY

Epidemiology and Infection publishes reports of research and original findings in subjects related to infectious diseases. Particular emphasis is given to the epidemiology, prevention and control of such diseases, but the field covered is broad and includes microbiological, virological, immunological, clinical and social aspects of infectious diseases of man and animals.

SUBSCRIPTIONS

Epidemiology and Infection (ISSN 0950-2688) is published monthly, 16 parts forming a volume, by Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK/Cambridge University Press, 32 Avenue of the Americas, New York, NY 10013-2473, USA. The electronic only price available to institutions of Volume 143 (2015) is £1074 net (US \$1964 in the USA, Canada and Mexico). Back volumes are also available.

Orders, which must be accompanied by payment, may be sent to a bookseller, subscription agent or direct to the publisher: Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK; or in the USA, Canada and Mexico: Cambridge University Press, Journals Fulfillment Department, 100 Brook Hill Drive, West Nyack, New York 10994-2133. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, PO Box 55, Chitose, Tokyo 156, Japan. Prices include delivery by air.

Periodicals postage paid at New York, NY, and at additional mailing offices.

EDITORIAL BOARD

P. Aavitsland, *Epidemi, Norway*

R. M. Anderson, *Imperial College of Science, Technology and Medicine, UK*

C. S. Block, *Hadassah University Hospital, Jerusalem, Israel*

T. Brewer, *University of California, Los Angeles, USA*

J. Clement, *University Hospitals Leuven and Rega Institute for Medical Research, Belgium*

M. David, *University of Chicago, USA*

M. Evans, *CDSC, Public Health Wales, Cardiff, UK*

C. Fairley, *University of Melbourne, Australia*

D. M. Fleming, *RCGP Research Unit, Birmingham, UK*

A. Fooks, *Animal Health and Veterinary Laboratories Agency (AHVLA), UK*

S. Hahné, *National Institute for Public Health and the Environment, Bilthoven, The Netherlands*

S. Harper, *University of Guelph, Canada*

C. W. Hedberg, *School of Public Health, University of Minnesota, Minneapolis, USA*

D. Heymann, *Public Health England, UK*

Y. Hutin, *European Centre for Disease Control, Stockholm, Sweden*

C. R. MacIntyre, *University of Sydney, Australia*

J. McVernon, *MCRI & School of Population Health, University of Melbourne, Australia*

T. J. Marrie, *Dalhousie University, Canada*

E. Miller, *CDSC, Public Health England, London, UK*

P. Monk, *Public Health England, UK*

P. P. Mortimer, *Specialist and Microbiology Division, Health Protection Agency, London, UK*

K. Murray, *Baylor College of Medicine, Houston, USA*

G. Balakrish Nair, *Translational Health Science and Technology Institute, Gurgaon, India*

S. O'Brien, *University of Manchester, UK*

P. Okhuysen, *University of Texas Medical School, USA*

R. L. Salmon, *CDSC, Public Health Wales, Cardiff, UK*

J. Stuart, *University of Bristol, UK*

R. Tauxe, *Centers for Disease Control and Prevention, Atlanta, USA*

E. J. Threlfall, *Laboratory of Enteric Pathogens, Public Health England, UK*

A. P. Zavascki, *Universidade Federal do Rio Grande do Sul, Brazil*

EDITORIAL BOARD STATISTICIANS

N. Bar-Zeev, *Malawi-Liverpool-Wellcome Trust, Malawi*

D. De Angelis, *Medical Research Council Biostatistics Unit, Cambridge, UK*

F. Warburton, *Public Health England, UK*

POSTMASTER: send address changes in the USA, Canada and Mexico to: *Epidemiology and Infection*, Cambridge University Press, 100 Brook Hill Drive, West Nyack, New York 10994-2133. Claims for missing issues should be made immediately on receipt of the subsequent issue.

COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com). Organizations in the USA who are also registered with CCC may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to CCC. This consent does not extend to multiple copying for promotional or commercial purposes.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, PA 19104, USA, is authorized to supply single copies of separate articles for private use only.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

Internet Access

This journal is included in the Cambridge Journals Online service which can be found at journals.cambridge.org. For further information on other Press titles access cambridge.org

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

Cover images: Doctor giving injection to Muslim baby © Ezz Mika Elya/shutterstock; Ebola Virus Particles – Courtesy of the National Institute of Allergy and Infectious Diseases; Fruit bat (flying fox) hanging in Tree © gallimaufry/shutterstock