

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Vital Accounts

Why did Europeans begin to count births and deaths? How did they collect the numbers and what did they do with them? Through a compelling comparative analysis, *Vital Accounts* charts the work of the physicians, clergymen, and government officials who crafted the sciences of political and medical arithmetic in England and France during the long eighteenth century, before the emergence of statistics and regular government censuses. Andrea A. Rusnock presents a social history of quantification that highlights the development of numerical tables, influential and enduring scientific instruments designed to evaluate smallpox inoculation, to link weather and disease, to compare infant and maternal mortality rates, to identify changes in disease patterns, and to challenge prevailing views about the decline of European population. By focusing on the most important eighteenth-century controversies over health and population, Rusnock shows how vital accounts – the numbers of births and deaths – became the measure of public health and welfare.

Andrea A. Rusnock is Assistant Professor of History at the University of Rhode Island.

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Cambridge Studies in the History of Medicine

Edited by

CHARLES ROSENBERG, Professor of History and Sociology of Science,
University of Pennsylvania, and COLIN JONES, University of Warwick

Other titles in the series:

Health, Medicine and Morality in the Sixteenth Century, EDITED BY CHARLES WEBSTER

The Renaissance Notion of Woman: A Study in the Fortunes of Scholasticism and Medical Science in European Intellectual Life, IAN MACLEAN

Mystical Bedlam: Madness, Anxiety and Healing in Sixteenth-Century England, MICHAEL MACDONALD

From Medical Chemistry to Biochemistry: The Making of a Biomedical Discipline, ROBERT E. KOHLER

Joan Baptista Van Helmont: Reformer of Science and Medicine, WATER PAGEL

A Generous Confidence: Thomas Story Kirkebride and the Art of Asylum-Keeping, 1840–1883, NANCY TOMES

The Cultural Meaning of Popular Science: Phrenology and the Organization of Consent in Nineteenth-Century Britain, ROGER COOTER

Madness, Morality and Medicine: A Study of the York Retreat, 1796–1914, ANNE DIGBY

Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society, EDITED BY ROY PORTER

Hospital Life in Enlightenment Scotland: Care and Teaching at the Royal Infirmary of Edinburgh, GUENTER B. RISSE

Plague and the Poor in Renaissance Florence, ANNE G. CARMICHAEL

Victorian Lunacy: Richard M. Bucke and the Practice of Late Nineteenth-Century Psychiatry, S. E. D. SHORTT

Medicine and Society in Wakefield and Huddersfield, 1780–1870, HILARY MARLAND

Ordered to Care: The Dilemma of American Nursing, 1850–1945, SUSAN M. REVERBY

Morbid Appearances: The Anatomy of Pathology in the Early Nineteenth Century, RUSSELL C. MAULITZ

Professional and Popular Medicine in France, 1770–1830: The Social World of Medical Practice, MATTHEW RAMSEY

Abortion, Doctors and the Law: Some Aspects of the Legal Regulation of Abortion in England, 1884–1984, DONALD DENOON

Health, Race and German Politics Between National Unification and Nazism, 1870–1945, PAUL WEINDLING

The Physician-Legislators of France: Medicine and Politics in the Early Third Republic, 1870–1914, JACK D. ELLIS

The Science of Woman: Gynecology and Gender in England, 1800–1929, ORNELLA MOSCUCCI

Quality and Quantity: The Quest for Biological Regeneration in Twentieth-Century France, WILLIAM H. SCHNEIDER

Continued on page following the index

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Vital Accounts

*Quantifying Health and Population in Eighteenth-Century
England and France*

ANDREA A. RUSNOCK

University of Rhode Island



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

CAMBRIDGE
UNIVERSITY PRESS

32 Avenue of the Americas, New York NY 10013-2473, USA

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of
education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9780521803748

© Andrea A. Rusnock 2002

This publication is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without the written
permission of Cambridge University Press.

First published 2002

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

Rusnock, Andrea Alice.

Vital accounts : quantifying health and population in eighteenth-century
England and France / Andrea A. Rusnock.

p. cm. – (Cambridge studies in the history of medicine)

Includes bibliographical references and index.

ISBN 0-521-80374-8 (hc.)

1. Medical statistics – England – History. 2. Medical statistics – France –
History. 3. Mortality – England – History. 4. Mortality – France – History.

5. Epidemiology – England – History. 6. Epidemiology – France – History.

7. Public health – England – History. 8. Public health – France – History.

I. Title. II. Series.

RA407.5.G7 R87 2002

614.4'241'09033 – dc21

2002067063

ISBN 978-0-521-80374-8 Hardback

ISBN 978-0-521-10123-3 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of
URLs for external or third-party internet websites referred to in this publication,
and does not guarantee that any content on such websites is, or will remain, accurate
or appropriate.

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

For Oliver and Rosalind

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

CONTENTS

<i>List of Illustrations</i>	<i>page xi</i>
<i>Acknowledgments</i>	xv
Introduction	1
Method of Tables	5
Method of Comparison	7
Method of Controversy	10
1 A New Science: Political Arithmetic	15
Crafting a New Method: Numerical Tables	16
Natural Observations	24
Political Observations	33
PART ONE: SMALLPOX INOCULATION AND MEDICAL ARITHMETIC	
2 A Measure of Safety: English Debates over Inoculation in the 1720s	43
Arbuthnot's Vindication	46
Jurin's Accounts	49
Building a Correspondence Network	55
Tallying the Typical	59
Challenging the Atypical	63
The Appeal of Calculation	66
3 The Limits of Calculation: French Debates over Inoculation in the 1760s	71
The Paris Faculté de Médecine	72
Inoculation à la Mode	75
La Condamine's Lottery	77
Bernoulli and d'Alembert	81
Physicians Respond	86
A Plea for Registers	88

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

x	<i>Contents</i>	
4	Charitable Calculations: English Debates over the Inoculation of the Urban Poor, 1750–1800	92
	The London Smallpox Hospital	94
	Dispensaries and Home Inoculations in London	95
	Inoculation outside London	101
	PART TWO: MEDICAL ARITHMETIC AND ENVIRONMENTAL MEDICINE	
5	Medical Meteorology: Accounting for the Weather and Disease	109
	Numerical Natural Histories of the Weather	110
	England, 111 • France, 117	
	Linking Disease and Weather	119
	England, 122 • France, 126	
	Observations Reduced	128
6	Interrogating Death: Disease, Mortality, and Environment	137
	To Improve the Classification of Death	139
	The London Bills of Mortality Analyzed	143
	Mortality by Age and Place	157
	Variations in Mortality between the Sexes	171
	PART THREE: POLITICAL ARITHMETIC	
7	Count, Measure, Compare: The Depopulation Debates	179
	Counting the People: Censuses and Vital Registration	182
	Britain, 183 • France, 188	
	Calculating the Population: The Universal Multiplier	192
	Britain, 193 • France, 201	
	The Role of Partial Enumerations	206
	Conclusion	211
	<i>Bibliography</i>	219
	<i>Index</i>	243

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

ILLUSTRATIONS

1.1	Fifteenth-century London bill of mortality	<i>page</i> 20
1.2	London bill of mortality (1624–1625)	21
1.3	Table of casualties from the 1632 London bill of mortality	23
1.4	John Graunt's table of casualties (1629–1660)	26
1.5	John Graunt's table of notorious diseases	30
1.6	William Petty's proposed weekly bill of mortality for Dublin	32
1.7	William Petty's proposed quarterly bill of mortality for Dublin	32
1.8	John Graunt's life table	35
2.1	John Arbuthnot's table of smallpox deaths from the London bills (1707–1718)	48
2.2	James Jurin's table of smallpox mortality from the London bills (1667–1686)	53
2.3	James Jurin's table of smallpox mortality from the London bills (1701–1722)	54
2.4	James Jurin's advertisement soliciting accounts of inoculation (1723)	56
2.5	James Jurin's table of smallpox morbidity and mortality outside of London (1722)	63
3.1	Charles-Marie de la Condamine's table of hypothetical smallpox mortality (1765)	80

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

xii	<i>Illustrations</i>	
3.2	Daniel Bernoulli's table combining Halley's life table with smallpox mortality figures by age (1760)	83
3.3	Daniel Bernoulli's table comparing life expectancy with and without smallpox (1760)	84
4.1	Thomas Dimsdale's table of smallpox deaths from the London bills (1734–1767)	97
4.2	Thomas Dimsdale's table of smallpox deaths from the London bills (1768–1775)	98
4.3	Thomas Percival's table of smallpox deaths by age and sex in Manchester (1768–1774)	104
4.4	Thomas Percival's table of smallpox deaths by age in Manchester	105
5.1	Robert Hooke's proposed table to record meteorological observations (1667)	112
5.2	James Jurin's proposed table to record meteorological observations (1723)	113
5.3	Louis Cotte's meteorological table for June 1776	120
5.4	Francis Clifton's proposed table to record observations of disease (1731)	123
5.5	Roger Pickering's proposed table of meteorological and acute disease observations (1744)	125
5.6	Jean Razoux's meteorological table for July 1758	130
5.7	Jean Razoux's nosological table for male patients treated at the Hôtel-Dieu of Nîmes (July 1758)	131
5.8	Jean Razoux's nosological table for male patients, continued	132
5.9	Jean Razoux's nosological table for female patients treated at the Hôtel-Dieu of Nîmes (July 1758)	133
5.10	Jean Razoux's summary table based on François Boissier de Sauvages's nosology (July 1758)	134
6.1	Thomas Short's table of baptisms and burials from country parishes (seventeenth century)	145

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

	<i>Illustrations</i>	xiii
6.2	Thomas Short's table of children's deaths listed by disease from the London bills	147
6.3	Thomas Short's table of deaths common to children and adults from the London bills	148
6.4	Thomas Short's table of adult deaths listed by disease from the London bills	149
6.5	Thomas Short's table of deaths due to casualties from the London bills	149
6.6	William Black's table of deaths by diseases and casualties from the London bills (1701–1776)	150
6.7	William Heberden's table of deaths by diseases from the London bills (1701–1720)	153
6.8	William Heberden's table of weekly mortality listed by age and disease from the London bills (1763)	154
6.9	William Heberden's table of dysentery deaths (1700–1800)	155
6.10	William Heberden's table of maternal mortality (1749–1800)	156
6.11	Thomas Short's life table from the London bills (1728–1743)	160
6.12	John Haygarth's table of deaths by disease for Chester (1772)	162
6.13	Jean-Baptiste Moheau's table of life expectancies for mountainous areas (1778)	164
6.14	Jean-Baptiste Moheau's table of life expectancies for marshy areas (1778)	165
6.15	Thomas Short's table of salubrity	166
6.16	John Haygarth's table of monthly mortalities by disease, following Cullen's nosology, for Chester (1775)	168
6.17	William Heberden's table of monthly mortalities listed by age from the London bills	169
6.18	Jean-Baptiste Moheau's table of monthly mortalities listed by age (1778)	170
6.19	John Haygarth's mortality table by age, sex, and marital status (1774)	172

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)xiv *Illustrations*

6.20	Jacques Tenon's table of maternal mortality in Paris (1788)	174
7.1	Edmond Halley's life table (1693)	186
7.2	William Brakenridge's table of London burials (1704–1753)	196
7.3	Jean-Baptiste Moheau's table of multipliers (1778)	205
C.1	Thomas Percival's table of measles deaths listed by age, sex, and month (1768–1774)	216

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

ACKNOWLEDGMENTS

This book began as a doctoral dissertation in the Program of History of Science at Princeton University, and I have returned many times to the cardinal questions posed by my astute readers Lorraine Daston, Gerald Geison, and Michael Mahoney. It took a decidedly medical turn when I had the pleasure to work at the Wellcome Institute for the History of Medicine in London in 1992–1993. In the richly accoutred building on Euston Road, I benefited from the numerous colloquia and unlimited discussions with Philip Kreager, Susan Lawrence, Andreas Holger Maehle, Molly Sutphen, Andrew Wear, and many other fellows. William Bynum shared his extensive knowledge of the profession of medicine and the history of medicine in all their various guises. The inimitable Roy Porter offered especially valuable and cogent advice at a critical moment during revisions.

This book was supported by a Fellowship for University Teachers from the National Endowment for the Humanities (1996–1997), which allowed for travel to France and time to write. Parts of this book have been presented at the annual meetings of the American Association for the History of Medicine, the American Historical Association, and the History of Science Society and at workshops held at Cambridge University, University of Essex, the Wellcome Institute for the History of Medicine, the Philadelphia College of Physicians, the Clark Library, Princeton University, and Yale University. I thank the participants of these meetings and especially the organizers: Thomas Broman, David Cantor, William Clark, Catherine Crawford, Jan Golinski, Anne Hardy, Eileen Magnello, Simon Schaffer, Mary Terrall, John Harley Warner, and Norton Wise.

Many individuals have helped with specific parts of the book and it is with pleasure that I acknowledge my debts. Colin Jones and Elizabeth Williams generously shared their knowledge of eighteenth-century French medicine and, in particular, the archival resources in Montpellier. Marie-Noëlle Bourguet, Laura Mason, and Michael Kwass kept me abreast of the latest scholarship on eighteenth-century French administrative history. Richard Sorrenson introduced me to the archives of the Royal Society (and its elegant cafeteria), and

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)xvi *Acknowledgments*

more generally traded notes about eighteenth-century British science. Robert Frank contributed his expertise on English demographic history and pushed me to put my work in a broader political and economic framework. John Carson has remained an incisive critic and encouraging friend since graduate school. Vivien Dietz guided me through the recent work in British history and, more importantly, has offered her warm support and understanding of that essential professional–maternal tension over these many years.

I would also like to thank the archivists and librarians at the Library of the Wellcome Institute for the History of Medicine, the Royal Society, the British Library, the Bibliothèque Nationale, the Académie Royale des Sciences, and the Archives Départementale de l'Hérault. The interlibrary loan staff at Rensselaer Polytechnic Institute and the University of Rhode Island did heroic service. Toby Appel, at the Harvey Cushing/John Hay Whitney Medical Library at Yale University, and Benjamin Weiss, at the Burndy Library of the Dibner Institute for the History of Science and Technology, were very helpful in securing reprints of the tables included in this book. I thank both libraries for their kind permission to reproduce these vital accounts. I am grateful to Editions Rodopi for granting permission to use material from my essays that appeared in *Medicine in the Enlightenment* (edited by Roy Porter) and *The Correspondence of James Jurin*. Princeton University Press kindly allowed me to use material from my essay in *The Values of Precision* (edited by M. Norton Wise).

Theodore Porter, J. Rosser Matthews, and an anonymous reader from Cambridge University Press read the entire manuscript, and their excellent suggestions have made this a richer book. Charles Rosenberg, as series editor, has warmly encouraged me in this project. My colleagues at the University of Rhode Island and Rensselaer Polytechnic Institute, especially P. Thomas Carroll, David Ellison, Joelle Rollo-Koster, Linda Layne, and Marie Schwartz, have provided useful advice. Any errors, of course, remain my own.

Finally, I would like to thank my family: my brother, Paul, for his expansive and entertaining knowledge of eighteenth-century mathematics and philosophy; my mother, Alice, for her unwavering belief in her daughter and for her Scottish commonsense philosophy; and my father, Andrew (an arch quantifier), for his gentle skepticism and unremitting intellectual curiosity. Above all, I am indebted to my husband, Paul Lucier, whose patient support, careful readings (and rereadings!), playful wit, and deep passion for history and science have made the writing of this book both a pleasure and a challenge. It is with the joy of a shared life that I dedicate this book to our children, Oliver and Rosalind.

Wakefield, Rhode Island
April 2002

Cambridge University Press

978-0-521-80374-8 - Vital Accounts: Quantifying Health and Population in Eighteenth-Century
England and France

Andrea A. Rusnock

Frontmatter

[More information](#)

Vital Accounts

*Quantifying Health and Population in Eighteenth-Century
England and France*