

February 7, 2007

Phyllis M. Wise, Ph.D.  
Provost  
Office of the Provost  
301 Gerberding, Box 351237

Dear Provost Wise:

We write to propose the creation of a new research institute at the University of Washington. The proposed name for the institute would be the "Health Metrics Institute." The establishment of this proposed institute will be dependent on our ability to recruit Professor Christopher Murray from Harvard University and our ability to compete successfully for funding from the Bill and Melinda Gates Foundation. We have an unusual opportunity to recruit Professor Christopher Murray who is exceptionally well qualified to lead this proposed research institute as reflected on his curriculum vitae (attached).

The Health Metrics Institute will develop innovative analytical frameworks, methods, and instruments to increase the efficiency and effectiveness of generating health information. High quality health information is critical to facilitate evidence-based decision making in public health and medicine. There are enormous gaps in the availability and timeliness of current information on basic health outcomes, financial and human resources, and the quality and coverage of health interventions. Key questions about the potential impact of major investments in disease-specific or intervention-specific programs cannot be investigated adequately because of the poor quality and availability of health information. Valid information on health outcomes is needed to guide decisions on health spending, especially given the steady rise of global health spending.

The University of Washington does not have a research institute or center that is devoted to developing the high quality information needed for evidence-based decisions about healthcare systems. We believe that Professor Christopher Murray is exceptionally well-qualified to develop this research institute, which can fill this critical gap and will also serve to evaluate technologies and contribute to the development of national and international policies and reforms. Under Professor Murray's leadership, the Health Metrics Institute at the University of Washington will fill the information gap by recruiting the best researchers and analysts to conduct scientifically rigorous research and analyses on health services delivery and health outcomes. The Institute funding will also allow these researchers and analysts to engage in measurement, monitoring, and evaluation activities that are difficult to finance on a project-specific basis, and yet are critical to making evidence-based decisions in global health.

Establishment of the proposed institute will depend on funding by the Bill and Melinda Gates Foundation. Professor Murray is currently working on a final draft of the proposal to the Gates Foundation, and we will provide you with a copy of this proposal when it is complete. Funding for the proposed Institute's activities will also depend on the University's proposal to the state of Washington for funding for global health activities. Our request for the University to consider creation of the proposed Institute is dependent on the new funding from the Gates Foundation and the state of Washington. The proposal to the Gates Foundation will provide a summary of the Institute's research, training and policy translation agenda, the Institute's organizational structure, the Institute's budget and funding sources, and the recruitment plan for researchers and analysts. The proposed Institute would be administratively affiliated with the Department of Global Health in the School of Public Health and Community Medicine and the School of Medicine although some Institute faculty might have primary appointments in other departments or faculties. Due to the critical nature of the health information developed by the Institute, we believe that the Institute should have an international advisory board appointed by the University of Washington Board of Regents. Enclosed is a draft of proposed bylaws for the Institute to be presented to the Board of Regents.

We believe that the establishment of the Health Metrics Institute at the University of Washington represents an extraordinary opportunity. If Professor Christopher Murray accepts our offer to join the faculty at the University of Washington as a professor in the Department of Global Health, we request your approval to create the Institute.

Sincerely,

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Paul G. Ramsey, M.D.  
CEO, UW Medicine  
Executive Vice President for Medical Affairs and  
Dean of the School of Medicine,  
University of Washington

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Patricia W. Wahl, Ph.D.  
Dean, School of Public Health  
and Community Medicine  
University of Washington

attachment

**HEALTH METRICS INSTITUTE  
AT THE UNIVERSITY OF WASHINGTON**

**BOARD BYLAWS  
2007**

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## **PREAMBLE**

Whereas the Board of Regents of the University of Washington is empowered by the Washington State Legislature to develop and maintain educational, research and service programs in global health; and

Whereas the University of Washington (the “University”) carries out extensive activities in these areas; continues to build its strength in meeting its mission in these areas; and in doing so is endeavoring to contribute substantially to efforts to address regional, national and international needs for dramatic improvement of health services;

Whereas its contributions in these areas would be markedly enhanced by creation of a strong program for research, reporting, and training dedicated to monitoring global health and health systems and evaluating technologies, initiatives, policies and reforms;

Whereas the Health Metrics Institute at the University of Washington (the “Institute”) would be dedicated to this goal, providing needed programmatic focus in independent and objective monitoring and evaluation of global health, thereby allowing key actors in both governmental and private sectors to be strategic and empowered in their decisions; and

Whereas the Board of Regents has determined that a Board should be established for the governance of the Institute to promote the success of the Institute by overseeing its activities;

The Board of Regents hereby creates the Board of the Health Metrics Institute at the University of Washington (the “Board”) which shall, subject to the authority of the Board of Regents, and the policies of the University, be charged with overseeing the Institute’s activities with the goal of making substantial contributions to promote the health of people throughout the world.

## **ARTICLE I THE BOARD**

### Section 1.1. Board Membership

The Board shall consist of nine (9) members. The Board members shall be appointed by the Board of Regents from nominations submitted by the President. The Chair of the Board of Regents shall appoint the Chair of the Board. Four members shall be from key global health institutions but shall serve in their individual capacity, four members shall be eminent scientists or policy makers from around the world, and the Chair of the Board shall be a leading figure with a scientific background and substantial leadership experience with health policy programs.

The term of office of each appointed Board member shall be three years. No appointed Board member may serve more than three successive three-year terms. However, the terms of Board members shall be staggered so that the final terms of no more than one-third (1/3) of the members will expire simultaneously on the last day of June in any one year. Whenever more

than one third (1/3) of the members' final terms expire simultaneously, lots will be drawn to determine which expiring term shall be extended for one more year to eliminate this condition.

The Board may grant a leave of absence to a member for a period not to exceed one year. If the leave of absence is less than six months, the term of the Board member will not change. If the leave of absence exceeds six months, the term of the Board member will be extended by one year.

In addition to the Board members, the Director of the Institute, the Deans of the Schools of Public Health and Community Medicine and Medicine, and the Chair of the Department of Global Health, shall be invited to attend Board meetings and to present agenda items to the Secretary. All agendas and insert materials of the Board meetings shall be provided by the secretary to all of the described positions.

#### Section 1.2. Duties

The Board shall have responsibility for providing general oversight and advising the Director regarding the programs and activities of the Institute. Specifically, the Board shall work to promote the success of the Institute's programs by:

- a. Reviewing and approving the annual operations budget of the Institute and its work program and long-term development plan, and advising the Director of the Institute regarding the development and strategic allocation of resources;
- b. Providing general advice and policy guidance for Institute strategic planning and program development including helping to define the role of present and future programs and the Institute's collaborative relationships;
- c. Approving mechanisms for formal affiliations of researchers and research institutions with the Institute; and
- d. Defining mechanisms for continuing assessment and improvement of the quality of the Institute's programs.

#### Section 1.3. Board Year

The Board year, including Board member appointments and Board officer terms, shall be from July 1 to June 30.

#### Section 1.4. Meetings and Notice

1.4.1. Regular Meetings. Regular meetings of the Board shall be held at least annually, the dates and places of which shall be determined by the Chair at least one month in advance, and notice of which shall be given in accordance with Chapter 42.30 RCW.

1.4.2. Special Meetings. Special meetings may be called by the Chair at any time, or by a majority of the members of the Board, provided that written notice to all Board members and to others as required by Chapter 42.30 RCW shall be given not less than twenty-four hours prior to the meeting, stating the time, place and business to be transacted at the meeting.

1.4.3. Procedure. Except as otherwise specified in these Bylaws, all meetings of the Board and its committees shall be conducted in accordance with the latest revision of Roberts Rules of Order.

Section 1.5. Quorum

A majority of the Board shall constitute a quorum.

Section 1.6. Vacancies

Whenever a vacancy occurs on the Board, for whatever reason, notice shall immediately be given to the President of the University so that a member may be appointed as soon as possible by the Board of Regents to fill the unexpired term. The Board may submit names of individuals recommended by the Board for the President's consideration.

Section 1.7. Removal

The Board may recommend to the Board of Regents that a member of the Board be removed. This action may be taken at any meeting by two-thirds vote of the entire Board, provided that the Board gives the affected member at least ten (10) days' written notice of such intended action and advises the affected member of the basis for such action. The Board member affected shall have the right to be heard and to explain to the Board why he/she should not be removed. Recommendation for suspension shall be made directly to the Board of Regents and shall not be effective until approved by the Board of Regents.

Any Board member who has three (3) unexcused absences for three (3) consecutive Board meetings or five (5) unexcused absences for Board meetings in an academic calendar year (July 1 through June 30), as determined by the Secretary, shall be automatically removed.

Section 1.8. Liability

All Board members and persons serving at the request of the Board shall, in the performance of their duties as members of the Board or appointees of the Board, be designated insureds, as "agents" under RCW 28.B.20.250, under the general liability coverage of the University. Each Board member or person serving at the request of the Board shall be protected against costs and expenses, including legal fees, in connection with the defense of any action, suit or proceeding in which the member or person serving at the request of the Board shall be made a party by reason of being a member or appointee of the Board. Such protection is subject to the condition that such person shall have acted in good faith and within the scope of his or her

duties, and subject further to the specific exemption and qualifications stated in either the University liability policy and RCW 23B.20.250 through 28B.20.255 which statute authorizes the indemnification of Regents, trustees, officers, and employees or agents of the University in relation to such matters.

Section 1.9. Compensation of Board and Board Committee Members

No Board member or any member of any committee appointed by the Board shall receive any compensation for services rendered in his/her capacity as a Board or committee member. However, nothing herein shall be construed to preclude any Board member or committee member from receiving a per diem for attending Board meetings, or reimbursement for expenses incurred for serving as a Board member or committee member or in any other capacity, all in accordance with established University practices and procedures, RCW 42.52, and RCW 43.03.050 and 43.03.060, as now existing or hereafter amended.

Section 1.10. Conflict of Interest

No Board member or any person appointed by the Board in any capacity may act as an agent for any person or organization where such an act would create a conflict of interest with the terms of the person's service to the Board. The policies, rules and regulations adopted by the University relating to conflict of interest and the provisions of RCW 42.52 shall apply to any person appointed by the Board in any capacity and to the Board members themselves.

**ARTICLE II  
OFFICERS**

Section 2.1. Officers

The officers of the Board shall be members of the Board and shall consist of a chair, vice chair, and such other officers as the Board may deem advisable. The Chair is appointed by the Chair of the Board of Regents. The Vice Chair and other officers shall be elected annually by the Board.

Section 2.2. Chair

The Chair of the Board shall appoint such committee members as are specified under these Bylaws; shall preside at all meetings of the Board; shall serve as an ex-officio member, without vote, on all standing and special committees, unless otherwise specified in the Bylaws; and shall perform all of the acts usually attendant upon the office of the Chair or which may be set forth by these Bylaws or by the Board.

Section 2.3. Vice Chair

During the absence of the Chair or while he/she is unable to act, the Vice Chair shall perform the duties and exercise the powers of the Chair.

**ARTICLE III  
ADMINISTRATION**

Section 3.1. Appointment of Administrative Officers

3.1.1. Secretary of the Board. A secretary of the Board shall be appointed by the Director in consultation with the Chair, with such duties as shall be provided in these Bylaws and otherwise determined by the Director and the Chair. The Secretary of the Board shall provide or cause to be provided all secretarial assistance to the Board and its committees; assist the Chair in developing an agenda for each meeting; keep records of the minutes of the meetings of the Board and furnish copies of such minutes to each Board member, the President and Provost of the University, the Dean of the School of Public Health and Community Medicine, the Dean of the School of Medicine, the Chair of the Department of Global Health, and others, in accordance with these Bylaws. The Director shall be custodian of and shall faithfully keep, or cause to be kept, all records, books, documents and other valuable papers relating to the Board. The Secretary shall be responsible for arranging all meeting notices and for attending to all correspondence that may be ordered by the Board.

**ARTICLE IV  
BOARD STANDING COMMITTEES**

Section 4.1. Committee Designations

The Board shall approve the appointment of such committees as it may from time to time deem advisable.

**ARTICLE V  
AMENDMENTS**

These Bylaws are reviewed annually and updated as needed. Changes in these Bylaws, whether amendments, additions, deletions or replacements, may be made by a two-thirds vote of the entire Board at a meeting of which prior notice of the meeting and the proposed action shall have been given. Such changes shall be subject to approval by the Dean of the School of Public Health and Community Medicine, the Dean of the School of Medicine, the President of the University, and the Board of Regents.

**CHRISTOPHER J.L. MURRAY**  
**Curriculum Vitae**

Address: Harvard University Initiative for Global Health  
104 Mt Auburn, 3rd Floor  
Cambridge, MA 02138  
Telephone: +617-495-8300  
Email: christopher\_murray@harvard.edu  
Nationality: New Zealand/US

**Education**

1991	MD (Magna Cum Laude)	Harvard Medical School, Boston Medicine
1987	DPhil	Oxford University, England International Health Economics
1984	BA SC (Summa Cum Laude)	Harvard University, Cambridge, MA Biology

**Appointments**

2006	-	Honorary Professor, School of Population Health, University of Auckland
2005	-	Director, Harvard Center for Population and Development Studies
2005	-	Honorary Professor, School of Population Health, University of Queensland
2003	-	Director, Harvard Initiative for Global Health Professor of Social Medicine, Harvard Medical School Richard Saltonstall Professor of Public Policy, Harvard School of Public Health Professor, Faculty of Arts and Sciences
2001-2003		Executive Director, Evidence and Information for Policy Cluster, World Health Organization
2001-2003		Adjunct Professor of International Health Economics, Department of Population and International Health, Harvard School of Public Health
2000-2001		Executive Director, <i>ad interim</i> , Evidence and Information for Policy Cluster, World Health Organization
1998-2000		Director, Global Programme on Evidence for Health Policy, Evidence and Information for Policy Cluster, World Health Organization
1998-2001		Professor of International Health Economics, Department of Population and International Health, Harvard School of Public Health
1994	-	Director, Burden of Disease Unit, Harvard Center for Population and Development Studies
1994-1998		Associate Professor of International Health Economics, Department of Population and International Health, Harvard School of Public Health
1991-1994		Assistant Professor of International Health Economics, Department of Population and International Health, Harvard School of Public Health

## **Medical Training**

- 1995-1997 Clinical Fellow in Medicine, Division of Infectious Diseases, Beth Israel Hospital, Brigham and Women's Hospital, Dana Farber Cancer Institute, Brockton/West Roxbury, VA Medical Center
- 1991-1995 Resident in Internal Medicine, Brigham and Women's Hospital
- 1989-1991 Research Fellow, Department of Population Sciences, Harvard School of Public Health and Center for Population and Development Studies, Harvard University

## **Honours and Awards**

- 2006 Inaugural Menolascino Lecture, Creighton University
- 2005 Inaugural Angeloupolos Professor, Kennedy School of Government
- 2004 Alvin L. Schultz Visiting Professor of Internal Medicine, University of Minnesota
- 2003 Black Distinguished Professor, University of Otago
- 2002 Honorary Professor, Fudan University
- 2000 Elias Bengtsson Medal
- 1990-92 Macarthur Fellow at the Center for Population and Development Studies
- 1984 T. Hoopes Prize (Harvard Thesis Prize)
- 1983 Marshall Scholar (Declined)
- 1983 Rhodes Scholar

## **Committees and Other Relevant Experience**

- 2003-Present Editor-in-Chief, *Population Health Metrics*
- 1996-1998 Member, Technical and Research Advisory Committee, Global Programme on Tuberculosis, World Health Organization
- 1995-1996 Chair, Working Group I, Who Ad Hoc Committee on Health Research Relating to Future Intervention Options
- 1992-1996 Chairman, World Health Organization Steering Committee on Tuberculosis Operational Research
- 1992-1993 Member of the World Development Report 1993: Investing in Health Writing Team
- 1987-1990 Staff Economist, Commission on Health Research For Development

## Publications

### *Journal Articles*

1. **Murray CJL**. Towards good practice for health statistics: lessons from the MDG health indicators. *The Lancet* 2006 (in press).
2. **Murray CJL**, Lopez AD, Chin B, Feehan D, Hill KH. Pandemic influenza mortality: global forecasts based on the 1918-20 pandemic. *The Lancet* 2006 (in press).
3. Krabbe PFM, Salomon JA, **Murray CJL**. Quantification of health states with rank-based nonmetric multidimensional scaling. *Medical Decision Making* 2006 (in press).
4. Gakidou E, Lozano R, Gonzalez-Pier E, Abbott-Klafter J, Barofsky JT, Bryson-Cahn C, Feehan DM, Lee DK, Hernandez-Llamas H, **Murray CJL**. Assessing the effect of the 2001-06 Mexican health reform: an interim report card. *The Lancet* 2006 Nov 25, 368(9550): 1920-35.
5. Lozano R, Soliz P, Gakidou E, Abbott-Klafter J, Feehan DM, Vidal C, Ortiz JP, **Murray CJL**. Benchmarking of performance of Mexican states with effective coverage. *The Lancet* 2006 Nov 11, 368(9548): 1729-41.
6. Danaei G, Lawes CMM, Vander Hoorn S, **Murray CJL**, Ezzati M. Global and regional mortality from ischaemic heart disease and stroke attributable to higher-than-optimum blood glucose concentration: comparative risk assessment. *The Lancet* 2006, 368: 1651–1659.
7. Lu C, Michaud CM, Gakidou E, Khan K, **Murray CJL**. Effect of the Global Alliance for Vaccines and Immunisation on diphtheria, tetanus, and pertussis vaccine coverage: an independent assessment. *The Lancet* 2006 Sep 23, 368(9541):1088-1095.
8. Michaud CM, McKenna MT, Begg S, Ezzati M, Bulzacchelli MT, Gaber Kreiser J, Tomijima N, Majmudar M, Ebrahim S, Salomon JA, **Murray CJL**. The Burden of Disease and Injury in the United States 1996. *Population Health Metrics* 2006, 4:11 (18 October 2006).
9. **Murray CJL**, Kulkarni S, Michaud C, Tomijima N, Bulzacchelli MT, Iandiorio TJ, Ezzati M. Eight Americas: investigating mortality disparities across races, counties, and race-counties in the United States. *PLoS Medicine* 2006 Sept, 3(9):e260.
10. Lu C, Michaud CM, Khan K, **Murray CJ**. Absorptive capacity and disbursements by the Global Fund to Fight AIDS, Tuberculosis and Malaria: analysis of grant implementation. *The Lancet* 2006 Aug 5, 368(9534):483-488.
11. Lopez AD, Mathers CD, Ezzati M, Jamison DT, **Murray CJL**. Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data. *The Lancet*, 2006 May 27, 367(9524):1747-1757.

12. Ezzati M, Martin H, Skjold S, Hoorn SV, **Murray CJL**. Trends in national and state-level obesity in the USA after correction for self-report bias: analysis of health surveys. *Journal of the Royal Society of Medicine*, 2006 May, 99(5):250-257.
13. **Murray CJL**, Kulkarni SC, Ezzati M. Understanding the coronary heart disease versus total cardiovascular mortality paradox. A method to enhance the comparability of cardiovascular death statistics in the United States. *Circulation*, 2006 May 2, 2071-2081.
14. **Murray CJL**, Kulkarni S, Ezzati M. Eight Americas: new perspectives on U.S. health disparities. *American Journal of Preventive Medicine*, 2005 Dec, 29(5 Suppl 1):4-10.
15. Danaei G, Vander Hoorn S, Lopez AD, **Murray CJL**, Ezzati M, Comparative Risk Assessment collaborating group (Cancers). Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors. *The Lancet*, 2005 Nov 19, 366(9499):1784-1793.
16. Ezzati M, Vander Hoorn S, Lawes CM, Leach R, James WP, Lopez AD, Rodgers A, **Murray CJL**. Rethinking the "diseases of affluence" paradigm: global patterns of nutritional risks in relation to economic development. *PLoS Medicine*, 2005 May, 2(5):e133. Epub 2005 May 3.
17. Shengelia B, Tandon A, Adams OB, **Murray CJL**. Access, utilization, quality, and effective coverage: an integrated conceptual framework and measurement strategy. *Social Science & Medicine*, 2005 Jul, 61(1):97-109.
18. McKenna MT, Michaud CM, **Murray CJL**, Marks JS. Assessing the burden of disease in the United States using disability-adjusted life years. *American Journal of Preventive Medicine*, 2005 Jun, 28(5):415-423.
19. Ebener S, **Murray CJL**, Tandon A, Elvidge C. From wealth to health: modelling the distribution of income per capita at the sub-national level using night-time light imagery. *International Journal of Health Geographics*, 2005, 4:5.
20. **Murray CJL**, Lopez AD, Wibulpolprasert S. Monitoring global health: time for new solutions. *British Medical Journal*, 2004, 329(7474):1096-1100.
21. Rodgers A, Ezzati M, Vander Hoorn S, Lopez AD, Lin RB, **Murray CJL**, Comparative Risk Assessment Collaborating Group. Distribution of major health risks: findings from the Global Burden of Disease Study. *PLoS Medicine*, 2004, 1(1):e27.
22. Lauer JA, Knox Lovell CA, **Murray CJL**, Evans DB. World health system performance revisited: the impact of varying the relative importance of health system goals. *BMC Health Services Research*, 2004, 4:19.

23. Ustun TB, Ayuso-Mateos JL, Chatterji S, Mathers C, **Murray CJL**. Global burden of depressive disorders in the year 2000. *British Journal of Psychiatry*, 2004 May, 184:386-392.
24. Salomon JA, **Murray CJL**. A multi-method approach to measuring health-state valuations. *Health Economics*, 2004 Mar, 13:281-290.
25. Salomon JA, Tandon A, **Murray CJL**. Comparability of self rated health: cross sectional multi-country survey using anchoring vignettes. *British Medical Journal*, 2004 Jan 31, 328:258.
26. King G, **Murray CJL**, Salomon JA, Tandon A. Enhancing the validity and cross-cultural comparability of measurement in survey research. *American Political Science Review*, 2003 Dec, 97(4):567-584. Reprinted, with printing errors corrected, 2004 Feb, 98(1):191-207.
27. **Murray CJL**, Shengelia B, Gupta N, Moussavi S, Tandon A, Thieren M. Validity of reported vaccination coverage in 45 countries. *The Lancet*, 2003 Sept 27, 362(9389).
28. Ezzati M, Vander Hoorn S, Rodgers A, Lopez AD, Mathers CD, **Murray CJL**, Comparative Risk Assessment Collaborating Group. Estimates of global and regional potential health gains from reducing multiple major risk factors. *The Lancet*, 2003 Jul 26, 362(9380):271-280.
29. Shibuya K, Ciecierski C, Guindon E, Bettcher DW, Evans DB, **Murray CJL**. WHO Framework Convention on Tobacco Control: development of an evidence based global public health treaty. *British Medical Journal*, 2003 Jul 19, 327(7407):154-157.
30. Xu K, Evans DB, Kawabata K, Zeramdini R, Klavus J, **Murray CJL**. Household catastrophic health expenditure: a multicountry analysis. *The Lancet*, 2003 Jul 12, 362(9378):111-117.
31. Brundtland GH, Frenk J, **Murray CJL**. WHO assessment of health systems performance. *The Lancet*, 2003 Jun 21, 361(9375):2155.
32. Mathers CD, Salomon JA, **Murray CJL**. Infant mortality is not an adequate summary measure of population health. *Journal of Epidemiology and Community Health*, 2003 May, 57(5):319.
33. **Murray CJL**, Ezzati M, Lopez AD, Rodgers A, Vander Hoorn S. Comparative quantification of health risks: conceptual framework and methodological issues. *Population Health Metrics*, 2003 Apr 14, 1(1):1.
34. Barendregt JJ, van Oortmarssen GJ, Vos T, **Murray CJL**. A generic model for the assessment of disease epidemiology: the computational basis of DisMod II. *Population Health Metrics*, 2003 Apr 14, 1(1):4.
35. Mathers CD, **Murray CJL**, Ezzati M, Gakidou E, Salomon JA, Stein C. Population health metrics: crucial inputs to the development of evidence for health policy. *Population Health Metrics*, 2003 Apr 14, 1(1):6 [editorial].

36. **Murray CJL**, Lauer JA, Hutubessy RCW, Niessen L, Tomijima N, Rodgers A, Lawes CMM, Evans DB. Effectiveness and costs of interventions to lower systolic blood pressure and cholesterol: a global and regional analysis on reduction of cardiovascular disease risk. *The Lancet*, 2003 Mar 1, 361(9359):717-725.
37. Adam T, Evans DB, **Murray CJL**. Econometric estimation of country-specific hospital costs. *Cost Effectiveness and Resource Allocation*, 2003 Feb 26, 1(1):3.
38. Lauer JA, Rohrich K, Wirth H, Charette C, Gribble S, **Murray CJL**. PopMod: a longitudinal population model with two interacting disease states. *Cost Effectiveness and Resource Allocation*, 2003 Feb 26, 1(1):6.
39. Mathers C, **Murray CJL**, Salomon J, Sadana R, Tandon A, Lopez A, Ustun B, Chatterji S. Healthy life expectancy: comparison of OECD countries in 2001. *Australian and New Zealand Journal of Public Health*, 2003, 27(1).
40. Mathers CD, **Murray CJL**, Lopez AD, Sadana R, Salomon JA. Global patterns of healthy life expectancy for older women. *Journal of Women & Aging*, 2002, 14(1-2):99-117.
41. Mathers CD, Shibuya K, Boschi-Pinto C, Lopez AD, **Murray CJL**. Global and regional estimates of cancer mortality and incidence by site: I. Application of regional cancer survival model to estimate cancer mortality distribution by site. *BMC Cancer*, 2002 Dec 26, 2(1):36.
42. Shibuya K, Mathers CD, Boschi-Pinto C, Lopez AD, **Murray CJL**. Global and regional estimates of cancer mortality and incidence by site: II. Results for the global burden of disease 2000. *BMC Cancer*, 2002 Dec 26, 2(1):37.
43. Baltussen RM, Hutubessy RC, Evans DB, **Murray CJL**. Uncertainty in cost-effectiveness analysis. Probabilistic uncertainty analysis and stochastic league tables. *International Journal of Technology Assessment in Health Care*, 2002 Winter, 18(1):112-119.
44. Ezzati M, Lopez AD, Rodgers A, Vander Hoorn S, **Murray CJL**, Comparative Risk Assessment Collaborating Group. Selected major risk factors and global and regional burden of disease. *The Lancet*, 2002 Nov 2, 360(9343):1347-1360.
45. Mathers CD, **Murray CJL**, Lopez AD. Epidemiological evidence: improving validity through consistency analysis. *Bulletin of the World Health Organization*, 2002, 80(8):611. Epub 2002 Aug 27.
46. **Murray CJL**, King G, Lopez AD, Tomijima N, Krug EG. Armed conflict as a public health problem. *British Medical Journal*, 2002 Feb 9, 324(7333):346-349.
47. Salomon JA, **Murray CJL**. The epidemiologic transition revisited: compositional models for causes of death by age and sex. *Population and Development Review*, 2002, 28(2):205-228.
48. King G, **Murray CJL**. Rethinking human security. *Political Science Quarterly*, 2002, 116(4):585-610.

49. Evans DB, Edejer TT, Lauer J, Frenk J, **Murray CJL**. Measuring quality: from the system to the provider. *International Journal for Quality in Health Care*, 2001 Dec, 13(6):439-446.
50. Evans DB, Tandon A, **Murray CJL**, Lauer JA. Comparative efficiency of national health systems: cross national econometric analysis. *British Medical Journal*, 2001 Aug 11, 323(7308):307-310.
51. Hutubessy RC, Baltussen RM, Evans DB, Barendregt JJ, **Murray CJL**. Stochastic league tables: communicating cost-effectiveness results to decision-makers. *Health Economics*, 2001 Jul, 10(5):473-477.
52. **Murray CJL**, Frenk J, Evans DB, Kawabata K, Lopez AD, Adams OB. Science or marketing at WHO? A response to Williams. *Health Economics*, 2001 Jun, 10(4):277-282.
53. **Murray CJL**, Kawabata K, Valentine N. People's experience versus people's expectations. *Health Affairs (Millwood)*, 2001 May-Jun, 20(3):21-24.
54. Salomon JA, **Murray CJL**. Modelling HIV/AIDS epidemics in sub-Saharan Africa using seroprevalence data from antenatal clinics. *Bulletin of the World Health Organization*, 2001, 79(7):596-607.
55. Mathers CD, Sadana R, Salomon JA, **Murray CJL**, Lopez AD. Healthy life expectancy in 191 countries, 1999. *The Lancet*, 2001 May 26, 357(9269):1685-1691.
56. Bhargava A, Jamison DT, Lau LJ, **Murray CJL**. Modeling the effects of health on economic growth. *Journal of Health Economics*, 2001 May, 20(3):423-440.
57. Michaud CM, **Murray CJL**, Bloom BR. Burden of disease--implications for future research. *Journal of the American Medical Association*, 2001 Feb 7, 285(5):535-539.
58. **Murray CJL**. Commentary: comprehensive approaches are needed for full understanding. *British Medical Journal*, 2001, 323(7314):680-681.
59. **Murray CJL**, Frenk J. Can the WHO Health Report improve the performance of health systems? A reply to Rosen. *Scandinavian Journal of Public Health*, 2001, 29(1):78-80.
60. Salomon JA, Mathers CD, **Murray CJL**. Applying DALYs to the burden of infectious diseases - Reply. *Bulletin of the World Health Organization*, 2001, 79(3):268-269.
61. **Murray CJL**, Frenk J. World Health Report 2000: a step towards evidence-based health policy. *The Lancet*, 2001, 357(9269):1698-1700.
62. **Murray CJL**, Salomon JA, Mathers CD. A critical examination of summary measures of population health. *Bulletin of the World Health Organization*, 2000, 78(8):981-994.

63. **Murray CJL**, Frenk J. A framework for assessing the performance of health systems. *Bulletin of the World Health Organization*, 2000, 78(6):717-731.
64. **Murray CJL**, Evans DB, Acharya A, Baltussen RM. Development of WHO guidelines on generalized cost-effectiveness analysis. *Health Economics*, 2000 Apr, 9(3):235-251.
65. **Murray CJL**, Lopez AD. Progress and directions in refining the global burden of disease approach: a response to Williams. *Health Economics*, 2000 Jan, 9(1):69-82.
66. Gakidou EE, **Murray CJL**, Frenk J. Defining and measuring health inequality: an approach based on the distribution of health expectancy. *Bulletin of the World Health Organization*, 2000, 78(1):42-54 [review].
67. **Murray CJL**, Gakidou E, Frenk J. Response to P. Braveman et al. (letter). *Bulletin of the World Health Organization*, 2000, 78(2):234-235.
68. **Murray CJL**, Gakidou EE, Frenk J. Health inequalities and social group differences: what should we measure? *Bulletin of the World Health Organization*, 1999, 77(7):537-543.
69. **Murray CJL**, Lopez AD. On the comparable quantification of health risks: lessons from the Global Burden of Disease study. *Epidemiology*, 1999, 10:594-605.
70. **Murray CJL**, Salomon JA. Modeling the impact of global tuberculosis control strategies. *Proceedings of the National Academy of Science USA*, 1998 Nov 10, 95(23):13881-13886.
71. **Murray CJL**, Salomon JA. Expanding the WHO tuberculosis control strategy: rethinking the role of active case-finding. *International Journal of Tuberculosis and Lung Disease*, 1998, 2(9):S9-S15.
72. **Murray CJL**, Lopez AD. Regional patterns of disability-free life expectancy and disability-adjusted life expectancy: results of the Global Burden of Disease Study. *The Lancet*, 1997, 349:1347-1352.
73. **Murray CJL**, Lopez AD. Quantifying global mortality, disability, and the contribution of risk factors: results of the Global Burden of Disease Study. *The Lancet*, 1997, 349:1436-1442.
74. **Murray CJL**, Lopez AD. The Global Burden of Disease 1990-2020: alternative projections of mortality and disability by cause for eight regions. *The Lancet*, 1997, 349:1498-1504.
75. **Murray CJL**, Lopez AD. Mortality by cause for eight regions of the world: results of the Global Burden of Disease Study. *The Lancet*, 1997, 349:1269-1276.
76. **Murray CJL**, Acharya AK. Understanding DALYs. *Journal of Health Economics*, 1997, 16:703-730.

77. Govindaraj R, Chellaraj G, **Murray CJL**. Health expenditures in Latin America and the Caribbean. *Social Science and Medicine*, 1997, 44(2):157-169.
78. **Murray CJL**, Lopez AD. The utility of DALYs for public health policy and research: a reply. *Bulletin of the World Health Organization*, 1997, 75(4):377-381.
79. **Murray CJL**, Lopez AD. Evidence-based health policy—lessons from the Global Burden of Disease Study. *Science*, 1996, 274:740-743.
80. China Tuberculosis Control Collaboration. Results of directly observed short-course chemotherapy in 112 842 Chinese patients with smear-positive tuberculosis. *The Lancet*, 1996, 347:358-362.
81. **Murray CJL**, Lopez AD. The incremental effect of age-weighting on YLLs, YLDs and DALYs: a response. *Bulletin of the World Health Organization*, 1996, 74(4):445-446.
82. **Murray CJL**. Global assessment of health status: lessons from the Global Burden of Disease Study. *Current Issues in Public Health*, 1995, 1(5):216-223.
83. **Murray CJL**. Towards an analytical approach to health sector reform. *Health Policy*, 1995, 32:93-109.
84. Lozano R, **Murray CJL**, Frenk J, Bobadilla J. Burden of disease assessment and health system reform: results of a study in Mexico. *Journal of International Development*, 1995, 7(3):555-563.
85. **Murray CJL**. Cuantificación de la carga de enfermedad: la base técnica del cálculo de los años de vida ajustados en función de la discapacidad. *Boletín de la Oficina Sanitaria Panamericana*, 1995, 118(3):221-242.
86. **Murray CJL**, Lopez AD. Patrones de distribución mundial y regional de las causas de defunción en 1990 / Global and regional cause-of-death patterns in 1990. *Boletín de la Oficina Sanitaria Panamericana (OSP)*, 1995, 118(4):307-345.
87. **Murray CJL**, Kreuser J, Whang W. Cost-effectiveness analysis and health sector policy choice: investing in health systems. *Bulletin of the World Health Organization*, 1994, 72(4):663-674.
88. **Murray CJL**, Govindaraj R, Musgrove P. Global domestic expenditures on health, 1990. *Bulletin of the World Health Organization*, 1994, 72(4):623-637.
89. Michaud C, **Murray CJL**. Aid flows to the health sector in developing countries, a detailed analysis 1972-1990. *Bulletin of the World Health Organization*, 1994, 72(4):639-651.
90. **Murray CJL**, Lopez AD, Jamison D. Global burden of disease in 1990: summary results, sensitivity analysis and future directions. *Bulletin of the World Health Organization*, 1994, 72(3):495-509.

91. **Murray CJL**, Lopez AD. Quantifying the burden of disability: data, methods, and results. *Bulletin of the World Health Organization*, 1994, 72(3):481-494.
92. **Murray CJL**, Lopez AD. Global causes of death patterns, 1990. *Bulletin of the World Health Organization*, 1994, 72(3):447-480.
93. **Murray CJL**. Quantifying the burden of disease: the technical basis for disability adjusted life years. *Bulletin of the World Health Organization*, 1994, 72(3):429-445.
94. DeJonghe E, **Murray CJL**, Chum H, Nyangulu D, Salomao A, Styblo K. Cost-effectiveness of chemotherapy for sputum smear-positive pulmonary tuberculosis in Malawi, Mozambique and Tanzania. *International Journal of Health Planning and Management*, 1994, 9:151-181.
95. Arno P, **Murray CJL**, Bonuck K, Alcabes P. The economic impact of tuberculosis in hospitals in New York City: a preliminary analysis. *Journal of Law, Medicine and Ethics*, 1993, 21(3-4):317-323.
96. Chen L, Hill A, **Murray CJL**, Garenne M. A critical analysis of the design, results and implications of the MUHS surveys. *International Journal of Epidemiology*, 1993, 22(5, Supplement 1):S73-S80.
97. Phillips M, Feachem R, **Murray CJL**, Over M, Kjellstrom T. Adult health: a legitimate concern for developing countries. *American Journal of Public Health*, 1993, 83(11):1527-1530.
98. **Murray CJL**, Chen L. In search of a contemporary theory for understanding mortality change. *Social Science and Medicine*, 1993, 36(2):143-155.
99. **Murray CJL**, Chen L, eds. Monitoring child survival programmes in Africa: the Africa Child Survival Initiative. *International Journal of Epidemiology*, 1993, 22(5), Supplement 1:S1-S80.
100. **Murray CJL**, Chen L. Understanding morbidity change. *Population and Development Review*, 1992, 18(3):481-503.
101. Bloom B, **Murray CJL**. Tuberculosis: commentary on a reemergent killer. *Science*, 1992, 257:1055-1064.
102. **Murray CJL**, DeJonghe E, Chum H, Nyangulu D, Salomao A, Styblo K. Cost-effectiveness of chemotherapy for pulmonary tuberculosis in three sub-Saharan African countries. *The Lancet*, 1991, 338:1305-1308.
103. **Murray CJL**. Social, economic and operational research on tuberculosis: recent studies and some priority questions. *Bulletin of the International Union Against Tuberculosis and Lung Disease*, 1991, 66:149-156.
104. **Murray CJL**. World tuberculosis burden (letter) *The Lancet*, 1990, 335(8696):1043-1044.

105. **Murray CJL.** Mortality among black men (letter). *New England Journal of Medicine*, 1990, 322(3):205-206.
106. **Murray CJL**, Styblo K, Rouillon A. Tuberculosis in developing countries. *Morbidity and Mortality Weekly Report*, 1990, 39(33):561-569.
107. **Murray CJL.** Rational approaches to priority setting in international health. *Journal of Hygiene and Tropical Medicine*, 1990, 93(5):303-311.
108. **Murray CJL**, Bell DE, DeJonghe E, Zaidi S, Michaud C. A study of financial resources for research on the health problems of developing countries. *Journal of Hygiene and Tropical Medicine*, 1990, 93:229-255.
109. **Murray CJL**, Styblo K, Rouillon A. Tuberculosis in developing countries: burden, intervention and cost. *Bulletin of the International Union Against Tuberculosis and Lung Diseases*, 1990, 65(1):2-20.
110. **Murray CJL**, Feachem R. Adult mortality in developing countries. *Transactions of Royal Society of Tropical Medicine and Hygiene*, 1990, 84(1):1-2.
111. **Murray CJL.** Letter on the infant mortality rate, life expectancy and a linear index of mortality as indicators of general health status. *International Journal of Epidemiology*, 1989, 18(1):282-283.
112. **Murray CJL.** The infant mortality rate, life expectancy and a linear index of mortality as indicators of general health status. *International Journal of Epidemiology*, 1988, 17:122-128.
113. Evans T, **Murray CJL.** A critical re-examination of the economics of blindness prevention under the Onchocerciasis Control Programme. *Social Science and Medicine*, 1987, 25(3):241-249.
114. **Murray CJL.** A critical review of international mortality data. *Social Science and Medicine*, 1987, 25(7):773-781.
115. Murray M, Murray A, **Murray CJL.** The salutary effect of milk on amoebiasis and its reversal by iron. *British Medical Journal*, 1980, 280(6228):1351-1352.
116. Murray M, Murray A, **Murray CJL.** An ecological interdependence of diet and disease? A study of infection in one tribe consuming two different diets. *American Journal of Clinical Nutrition*, 1980, 33(3):697-701.
117. Murray M, Murray A, Murray MB, **Murray CJL.** Rarity of planar warts in Cushmanite nomads: antiviral effect of milk? (letter) *The Lancet*, 1980, 2(8186):143-144.
118. Murray M, Murray A, Murray N, Murray M, **Murray CJL.** Molluscum contagiosum and herpes simplex in Maasai pastoralists: refeeding activation of virus infection following famine? *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1980, 74(3):371-374.

119. Murray M, Murray A, Murray M, **Murray CJL**. The adverse effects of iron repletion on the course of certain infections. *British Medical Journal*, 1978, 2(6145):1113-1115.
120. Murray M, Murray A, Murray M, **Murray CJL**. Parotid enlargement, forehead edema, and suppression of malaria as nutritional consequences of ascariasis. *American Journal of Clinical Nutrition*, 1977, 30(12):1351-1352.

### **Books**

121. Lopez AD, Mathers CD, Ezzati M, Jamison DT, **Murray CJL**, eds. *Global burden of disease and risk factors*. Oxford University Press and the World Bank, 2006.
122. **Murray CJL**, Lopez AD, Mathers CD, eds. *The global epidemiology of infectious diseases*. Geneva, World Health Organization, 2004.
123. Ezzati M, Lopez AD, Rodgers A, **Murray CJL**, eds. *Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors*. Geneva, World Health Organization, 2004.
124. Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, **Murray CJL**, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003.
125. **Murray CJL**, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003.
126. **Murray CJL**, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002.
127. Lopez AD, Ahmad OB, Guillot M, Inoue M, Ferguson BD, Salomon JA, **Murray CJL**, Hill KH. *World mortality in 2000: life tables for 191 countries*. Geneva, World Health Organization, 2002.
128. **Murray CJL**, Michaud CM, McKenna MT, Marks JS. *U.S. patterns of mortality by county and race: 1965-1994*. Cambridge, Harvard Center for Population and Development Studies on behalf of the Centers for Disease Control and Prevention and the Harvard School of Public Health, 1998.
129. **Murray CJL**, Lopez AD, eds. *Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders, and congenital anomalies*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1998.
130. **Murray CJL**, Lopez AD. *Global health statistics: a compendium of incidence, prevalence and mortality estimates for over 200 conditions*. Cambridge, Harvard

University Press on behalf of the World Health Organization and the World Bank, 1996.

131. **Murray CJL**, Lopez AD, eds. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996.
132. **Murray CJL**, Lopez AD, eds. Global comparative assessments in the health sector: disease burden, expenditures and intervention packages. Geneva, World Health Organization, 1994.
133. Feachem RG, Over M, Kjellstrom T, Phillips M, **Murray CJL**, eds. *The health of adults in the developing world*. New York, Oxford University Press, 1992.
134. Yang G, **Murray CJL**. *Adult mortality in China: levels, patterns and causes*. Beijing, Chinese Academy of Preventive Medicine, 1991.

### **Book Chapters**

135. Lopez AD, Mathers CD, Ezzati M, Jamison DT, **Murray CJL**. Measuring the global burden of disease and risk factors, 1990–2001. In: Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL, eds. *Global burden of disease and risk factors*. Oxford University Press and the World Bank, 2006:1-14.
136. Mathers CD, Lopez AD, **Murray CJL**. The burden of disease and mortality by condition: data, methods, and results for 2001. In: Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL, eds. *Global burden of disease and risk factors*. Oxford University Press and the World Bank, 2006:45-240.
137. Ezzati M, Vander Hoorn S, Lopez AD, Danaei G, Rodgers A, Mathers CD, **Murray CJL**. Comparative quantification of mortality and burden of disease attributable to selected risk factors. In: Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL, eds. *Global burden of disease and risk factors*. Oxford University Press and the World Bank, 2006:241-396.
138. Shibuya K, **Murray CJL**. Poliomyelitis. In: Murray CJL, Lopez AD, Mathers CD, eds. *The global epidemiology of infectious diseases*. Geneva, World Health Organization, 2004:111-150.
139. **Murray CJL**, Ezzati M, Lopez AD, Rodgers A, Vander Hoorn S. Comparative quantification of health risks: conceptual framework and methodological issues. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors. Geneva, World Health Organization, 2004:1-38.
140. Vander Hoorn S, Ezzati M, Rodgers A, Lopez AD, **Murray CJL**. Estimating attributable burden of disease from exposure and hazard data. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. *Comparative quantification of health risks: global and*

*regional burden of disease attributable to selected major risk factors*. Geneva, World Health Organization, 2004:2129-2140.

141. Ezzati M, Rodgers A, Lopez AD, Vander Hoorn S, **Murray CJL**. Mortality and burden of disease attributable to individual risk factors. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. *Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors*. Geneva, World Health Organization, 2004:2141-2165.
142. Ezzati M, Vander Hoorn S, Rodgers A, Lopez AD, Mathers CD, **Murray CJL**. Potential health gains from reducing multiple risk factors. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. *Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors*. Geneva, World Health Organization, 2004:2167-2190.
143. Lopez AD, Ezzati M, Rodgers A, Vander Hoorn S, **Murray CJL**. Conclusions and directions for future research. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. *Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors*. Geneva, World Health Organization, 2004:2231-2234.
144. Mathers CD, **Murray CJL**, Lopez AD, Salomon JA, Sadana R. Global patterns of health expectancy in the year 2000. In: Robine J, Jagger C, Mathers C, Crimmins E, Suzman R, eds. *Determining health expectancies*. John Wiley & Sons, Chichester, 2003:335-358.
145. **Murray CJL**, Evans DB, Acharya A, Baltussen RMPM. Development of WHO guidelines on generalized cost effectiveness analysis. In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:125-150.
146. Lauer JA, Röhrich K, Wirth H, Charette C, Gribble S, **Murray CJL**. PopMod: A longitudinal population model with two interacting disease states. In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:151-176.
147. Adam T, Evans DB, **Murray CJL**. Econometric estimation of country-specific hospital costs. In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:198-216.
148. Hutubessy RCW, Baltussen RMPM, Evans DB, Barendregt JJ, **Murray CJL**. Stochastic league tables: communicating cost-effectiveness results to decision-makers. In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:217-224.
149. Baltussen RMPM, Hutubessy RCW, Evans DB, **Murray CJL**. Uncertainty in cost-effectiveness analysis: probabilistic uncertainty analysis and stochastic league tables.

In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:225-236.

150. **Murray CJL**, Lauer JA, Hutubessy RCW, Niessen L, Tomijima N, Rodgers A, Lawes CMM, Evans DB. Effectiveness and costs of interventions to lower systolic blood pressure and cholesterol: a global and regional analysis on reduction of cardiovascular-disease risk. In: Tan-Torres Edejer T, Baltussen RMPM, Adam T, Hutubessy RCW, Acharya A, Evans DB, Murray CJL, eds. *Making choices in health: WHO guide to cost-effectiveness analysis*. Geneva, World Health Organization, 2003:237-275.
151. **Murray CJL**, Evans DB. Health systems performance assessment: goals, framework and overview. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:3-19.
152. Shengelia B, **Murray CJL**, Adams OB. Beyond access and utilization: defining and measuring health system coverage. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:221-234.
153. Moussavi S, Shengelia B, Tandon A, Gupta N, **Murray CJL**. Inequalities in coverage: valid DTP3 and measles vaccination in 40 countries. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:251-264.
154. **Murray CJL**, Shengelia B, Gupta N, Moussavi S, Tandon A, Thieren M. Validity of reported vaccination coverage in 45 countries. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:265-271.
155. Salomon JA, Mathers CD, Chatterji S, Sadana R, Ustun TB, **Murray CJL**. Quantifying individual levels of health: definitions, concepts, and measurement issues. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:301-318.
156. Mathers CD, Salomon JA, **Murray CJL**, Lopez AD. Alternative summary measures of average population health. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:319-334.
157. Lopez AD, Ahmad OB, Guillot M, Ferguson BD, Salomon JA, **Murray CJL**, Hill KH. Life tables for 191 countries for 2000: data, methods, results. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:335-353.
158. **Murray CJL**, Ferguson BD, Lopez AD, Guillot M, Salomon JA, Ahmad OB. Modified logit life table system: principles, empirical validation, and application. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:355-368.

159. **Murray CJL**, Özaltın E, Tandon A, Salomon JA, Sadana R, Chatterji S. Empirical evaluation of the anchoring vignette approach in health surveys. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:369-399.
160. Salomon JA, Tandon A, **Murray CJL**, World Health Survey Pilot Study Collaborating Groups. Unpacking health perceptions using anchoring vignettes. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:401-407.
161. Salomon JA, **Murray CJL**, Üstün TB, Chatterji S. Health state valuations in summary measures of population health. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:408-436.
162. Mathers CD, **Murray CJL**, Salomon JA. Methods for measuring healthy life expectancy. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:437-470.
163. Gakidou E, **Murray CJL**, Frenk J. A framework for measuring health inequality. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:471-484.
164. **Murray CJL**, Xu K, Klavus J, Kawabata K, Hanvoravongchai P, Zeramdini R, Aguilar-Rivera AM, Evans DB. Assessing the distribution of household financial contributions to the health system: concepts and empirical application. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:513-531.
165. Xu K, Klavus J, Kawabata K, Evans DB, Hanvoravongchai P, Ortiz JP, Zeramdini R, **Murray CJL**. Household health system contributions and capacity to pay: definitional, empirical, and technical challenges. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:533-542.
166. Xu K, Klavus J, Aguilar-Rivera AM, Carrin G, Zeramdini R, **Murray CJL**. Summary measures of the distribution of household financial contributions to health. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:543-555.
167. Xu K, Klavus J, Evans DB, Hanvoravongchai P, Zeramdini R, **Murray CJL**. The impact of vertical and horizontal inequality on the fairness in financial contribution index. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:557-563.
168. Xu K, Evans DB, Kawabata K, Zeramdini R, Klavus J, **Murray CJL**. Understanding household catastrophic health expenditures: a multi-country analysis. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:565-572.

169. Valentine NB, de Silva A, Kawabata K, Darby C, **Murray CJL**, Evans DB. Health system responsiveness: concepts, domains and operationalization. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:573-596.
170. Valentine NB, Lavallée R, Liu B, Bonsel GJ, **Murray CJL**. Classical psychometric assessment of the responsiveness instrument in the WHO Multi-country Survey Study on Health and Responsiveness 2000–2001. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:597-629.
171. Valentine NB, Ortiz JP, Tandon A, Kawabata K, Evans DB, **Murray CJL**. Patient experiences with health services: population surveys from 16 OECD countries. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:643-652.
172. Ortiz JP, Valentine NB, Gakidou E, Tandon A, Kawabata K, Evans DB, **Murray CJL**. Inequality in responsiveness: population surveys from 16 OECD countries. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:653-665.
173. Gakidou E, **Murray CJL**, Evans DB. Quality and equity: preferences for health system outcomes. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:667-675.
174. Lauer JA, Evans DB, **Murray CJL**. Measuring health system attainment: the impact of variability in the importance of social goals. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:677-681.
175. Tandon A, Lauer JA, Evans DB, **Murray CJL**. Health system efficiency: concepts. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:683-691.
176. Evans DB, Lauer JA, Tandon A, **Murray CJL**. Determinants of health system performance: second-stage efficiency analysis. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:693-698.
177. Evans DB, **Murray CJL**, Tandon A. Health system efficiency: time, attribution, and multiple indicators. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:699-703.
178. **Murray CJL**, Tandon A, Salomon JA, Mathers CD, Sadana R. Cross-population comparability of evidence for health policy. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:705-713.

179. **Murray CJL**, Mathers CD, Salomon JA. Towards evidence-based public health. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:715-726.
180. Tandon A, **Murray CJL**, Salomon JA, King G. Statistical models for enhancing cross-population comparability. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:727-746.
181. Ferguson BD, Tandon A, Gakidou E, **Murray CJL**. Estimating permanent income using indicator variables. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:747-760.
182. Ustun TB, Chatterji S, Villanueva M, Bendib L, Çelik C, Sadana R, Valentine NB, Ortiz JP, Tandon A, Salomon JA, Cao Y, Xie WJ, Özaltın E, Mathers CD, **Murray CJL**. WHO Multi-country Survey Study on Health and Responsiveness 2000–2001. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:761-796.
183. Ustun TB, Chatterji S, Mechbal A, **Murray CJL**, WHS Collaborating Groups. The World Health Surveys. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:797-808.
184. Travis P, Mechbal A, Tandon A, Ferguson BD, Thieren M, **Murray CJL**. Subnational health systems performance assessment: objectives, challenges and strategies. In: Murray CJL, Evans DB, eds. *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization, 2003:809-822.
185. **Murray CJL**, Frenk J. Summary measures of population health in the context of the WHO framework for health system performance assessment. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:1-11.
186. **Murray CJL**, Salomon JA, Mathers CD. A critical examination of summary measures of population health. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:13-40.
187. **Murray CJL**, Salomon JA, Mathers CD. The individual basis for summary measures of population health. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:41-51.
188. **Murray CJL**, Mathers CD, Salomon JA, Lopez AD. Health gaps: an overview and critical appraisal. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:233-244.

189. Mathers CD, Ezzati M, Lopez AD, **Murray CJL**, Rodgers A. Causal decomposition of summary measures of population health. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:273-290.
190. Sadana R, Mathers CD, Lopez AD, **Murray CJL**, Iburg KM. Comparative analyses of more than 50 household surveys on health status. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:369-386.
191. **Murray CJL**, Tandon A, Salomon JA, Mathers CD, Sadana R. New approaches to enhance cross-population comparability of survey results. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:421-431.
192. Iburg KM, Salomon JA, Tandon A, **Murray CJL**. Cross-population comparability of physician-assessed and self-reported measures of health. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:433-448.
193. Salomon JA, **Murray CJL**. Estimating health state valuations using a multiple-method protocol. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:487-499.
194. Salomon JA, **Murray CJL**. A conceptual framework for understanding adaptation, coping and adjustment in health state valuations. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:619-626.
195. **Murray CJL**, Acharya A. Age weights and discounting in health gaps reconsidered. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:677-684.
196. **Murray CJL**, Salomon JA, Mathers CD, Lopez AD. Summary measures of population health: conclusions and recommendations. In: Murray CJL, Salomon JA, Mathers CD, Lopez AD, eds. *Summary measures of population health: concepts, ethics, measurement and applications*. Geneva, World Health Organization, 2002:731-756.
197. Mathers C, **Murray CJL**, Lopez A, Sadana R, Salomon J. Global patterns of healthy life expectancy for older women. In: Laditka SB, ed. *Health expectations for older women: international perspectives*. The Haworth Press, New York, 2002:99-118.

198. Acharya A, **Murray CJL**. Economic appraisal of eradication programs: the question of infinite benefits. In: Dowdle WR, Hopkins DR, eds. *The eradication of infectious diseases*. New York, John Wiley & Sons, 1998.
199. **Murray CJL**, Lopez A. Quantifying the health risks of sex and reproduction: implications of alternative definitions. In: Murray CJL, Lopez A, eds. *Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders, and congenital anomalies*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1998:1-17.
200. Shibuya K, **Murray CJL**. Low birth weight. In: Murray CJL, Lopez A, eds. *Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders, and congenital anomalies*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1998:389-428.
201. Shibuya K, **Murray CJL**. Birth asphyxia. In: Murray CJL, Lopez A, eds. *Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders, and congenital anomalies*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1998:429-453.
202. Shibuya K, **Murray CJL**. Congenital anomalies. In: Murray CJL, Lopez A, eds. *Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders, and congenital anomalies*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1998:455-512.
203. **Murray CJL**, Bobadilla J. Epidemiological transition in the Former Socialist Economies: divergent patterns of mortality and causes of death. In: Bobadilla JL, Costello CA, Mitchell F, eds. *Premature death in the New Independent States*. Washington DC, National Academy Press, 1997.
204. **Murray CJL**. Epidemiological and demographic perspectives of tuberculosis. In: Timaeus IM, Chackiel J, Ruzicka L, eds. *Adult mortality in Latin America*. Oxford, Clarendon Press for IUSSP, 1996.
205. **Murray CJL**. A conceptual framework for understanding socio-economic differentials in morbidity. In: Das Gupta M, Krishnan T, Chen L, eds. *Health and development in India*. Oxford, Clarendon Press, 1996.
206. Ashley R, **Murray CJL**. Economic perspectives on vaccine needs. In: Kaufmann SHE, ed. *Concepts in vaccine development*. New York, Walter de Gruyter, 1996.

207. **Murray CJL**. Rethinking DALYs. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:1-98.
208. **Murray CJL**, Lopez AD. Estimating causes of death: new methods and global and regional applications for 1990. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:117-200.
209. **Murray CJL**, Lopez AD. Global and regional descriptive epidemiology of disability: incidence, prevalence, health expectancies and years lived with disability. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:201-246.
210. **Murray CJL**, Lopez AD. The global burden of disease in 1990: final results and their sensitivity to alternative epidemiological perspectives, discount rates, age-weights and disability weights. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:247-293.
211. **Murray CJL**, Lopez AD. Quantifying the burden of disease and injury attributable to ten major risk factors. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:295-324.
212. **Murray CJL**, Lopez AD. Alternative visions of the future: projecting mortality and disability, 1990-2020. In: Murray CJL, Lopez A, eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, Harvard University Press on behalf of the World Health Organization and the World Bank, 1996:325-395.
213. **Murray CJL**. Social, economic and operational research. In: Bloom B, ed. *Tuberculosis: pathogenesis, protection and control*. Washington DC, ASM Press, 1994.
214. **Murray CJL**. Development data constraints and the Human Development Index. In: Westendorf D, Ghai D. *Monitoring social progress in the 1990s*. Aldershot, Avebury, 1993.
215. **Murray CJL**. Resource allocation priorities: value for money in tuberculosis control. In: Porter J, McAdam K, eds. *London School of Hygiene and Tropical Medicine Third Annual Public Health Forum. Tuberculosis back to the future*. London, John Wiley and Sons, 1993.

216. **Murray CJL**, Styblo K, Rouillon A. Tuberculosis. In: Jamison DT et al., eds. *Disease control priorities in development countries*. New York, Oxford University Press for the World Bank, 1993.
217. **Murray CJL**, Yang G, Qiao C. Adult mortality: levels, patterns and causes. In: Feachem RG, Over M, Kjellstrom T, Phillips M, **Murray CJL**, eds. *The health of adults in the developing world*. New York, Oxford University Press, 1992.
218. **Murray CJL**, Feachem RG, Phillips M, Willis K. Adult morbidity in developing countries. In: Feachem RG, Over M, Kjellstrom T, Phillips M, **Murray CJL**, eds. *The health of adults in the developing world*. New York, Oxford University Press, 1992.

### **Discussion Papers**

219. Ferguson BD, Tandon A, Gakidou E, **Murray CJL**. *Estimating permanent income using indicator variables*. Global Programme on Evidence for Health Policy Discussion Paper No. 44. Geneva, World Health Organization, 2003. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
220. Tandon A, **Murray CJL**, Salomon JA, King G. *Statistical models for enhancing cross-population comparability*. Global Programme on Evidence for Health Policy Discussion Paper No. 42. Geneva, World Health Organization, 2002. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
221. Mathers CD, Stein C, Ma Fat D, Rao C, Inoue M, Tomijima N, Bernard C, Lopez AD, **Murray CJL**. *Global Burden of Disease 2000: Version 2 methods and results*. Global Programme on Evidence for Health Policy Discussion Paper No. 50. Geneva, World Health Organization, 2002. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
222. **Murray CJL**, Tandon A, Salomon JA, Mathers CD, Sadana R. *Cross-population comparability of evidence for health policy*. Global Programme on Evidence for Health Policy Discussion Paper No. 46. Geneva, World Health Organization, 2002. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
223. Chatterji S, Ustun TB, Sadana R, Salomon JA, Mathers CD, **Murray CJL**. *The conceptual basis for measuring and reporting on health*. Global Programme on Evidence for Health Policy Discussion Paper No. 45. Geneva, World Health Organization, 2002. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
224. Sadana R, Tandon A, **Murray CJL**, Serdobova I, Cao Y, Xie WJ, Chatterji S, Ustun TB. *Describing population health in six domains: comparable results from 66 household surveys*. Global Programme on Evidence for Health Policy Discussion Paper No. 43. Geneva, World Health Organization, 2002. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
225. Salomon JA, Tandon A, **Murray CJL**. *Using vignettes to improve cross-population comparability of health surveys: concepts, design, and evaluation techniques*. Global

- Programme on Evidence for Health Policy Discussion Paper No. 41. Geneva, World Health Organization, 2001. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
226. **Murray CJL**, Ferguson BD, Lopez AD, Guillot M, Salomon JA, Ahmad OB. *Modified logit life table system: principles, empirical validation and application*. Global Programme on Evidence for Health Policy Discussion Paper No.39. Geneva, World Health Organization, 2001. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
227. Mathers CD, **Murray CJL**, Lopez AD, Salomon JA, Sadana R, Tandon A, Ustün TB, Chatterji S. *Estimates of healthy life expectancy for 191 countries in the year 2000: methods and results*. Global Programme on Evidence for Health Policy Discussion Paper No. 38. Geneva, World Health Organization, 2001. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
228. Ustun TB, Chatterji S, Villanueva M, Bendib L, Çelik C, Sadana R, Valentine NB, Ortiz JP, Tandon A, Salomon JA, Cao Y, Xie WJ, Özaltın E, Mathers CD, **Murray CJL**. *WHO Multi-country Survey Study on Health and Responsiveness 2000–2001*. Global Programme on Evidence for Health Policy Discussion Paper No. 37. Geneva, World Health Organization, 2001. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
229. **Murray CJL**, Lopez AD, Mathers CD, Stein C. *The Global Burden of Disease 2000 project: aims, methods and data sources*. Global Programme on Evidence for Health Policy Discussion Paper No. 36. Geneva, World Health Organization, 2001. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
230. Iburg KM, Salomon JA, Tandon A, **Murray CJL**. Cross-population comparability of self-reported and physician-assessed mobility levels: evidence from the Third National Health and Nutrition Examination Survey. Global Programme on Evidence for Health Policy Discussion Paper No. 14. Geneva, World Health Organization, 2001. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
231. Mathers CD, Boschi-Pinto C, Lopez AD, **Murray CJL**. *Cancer incidence, mortality and survival by site for 14 regions of the world*. Global Programme on Evidence for Health Policy Discussion Paper No. 13. Geneva, World Health Organization, 2001. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
232. Lozano R, **Murray CJL**, Lopez AD, Satoh T. *Miscoding and misclassification of ischaemic heart disease mortality*. Global Programme on Evidence for Health Policy Discussion Paper No. 12. Geneva, World Health Organization, 2001. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
233. Salomon JA, Mathers CD, **Murray CJL**, Ferguson BD. Methods for life expectancy and healthy life expectancy uncertainty analysis. Global Programme on Evidence for Health Policy Discussion Paper No. 10. Geneva, World Health Organization, 2001. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)

234. **Murray CJL**, Lopez AD, Ahmad OB, Salomon JA. *WHO system of model life tables*. Global Programme on Evidence for Health Policy Discussion Paper No. 8. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
235. Lopez AD, Salomon JA, Ahmad OB, **Murray CJL**. *Life tables for 191 countries: data, methods and results*. Global Programme on Evidence for Health Policy Discussion Paper No. 9. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
236. Salomon J, **Murray CJL**. *Compositional models for mortality by age, sex and cause*. Global Programme on Evidence for Health Policy Discussion Paper No. 11. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
237. Sadana R, Mathers C, Lopez A, **Murray CJL**. *Comparative analyses of more than 50 household surveys on health status*. Global Programme on Evidence for Health Policy Discussion Paper No. 15. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
238. Mathers CD, Sadana R, Salomon JA, **Murray CJL**, Lopez AD. *Estimates of DALE for 191 countries: methods and results*. Global Programme on Evidence for Health Policy Discussion Paper No. 16. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
239. Gakidou E, Frenk J, **Murray CJL**. *Measuring preferences on health system performance assessment*. Global Programme on Evidence for Health Policy Discussion Paper No. 20. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
240. Valentine N, De Silva A, **Murray CJL**. *Estimating responsiveness level and distribution for 191 countries: methods and results*. Global Programme on Evidence for Health Policy Discussion Paper No. 22. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
241. Darby C, Valentine N, **Murray CJL**. *WHO strategy on measuring responsiveness*. Global Programme on Evidence for Health Policy Discussion Paper No. 23. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
242. **Murray CJL**, Knaul F, Musgrove P, Xu K, Kawabata K. *Defining and measuring fairness in financial contribution to the health system*. Global Programme on Evidence for Health Policy Discussion Paper No. 24. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
243. **Murray CJL**, Frenk J, Tandon A, Lauer J. *Overall health system achievement for 191 countries*. Global Programme on Evidence for Health Policy Discussion Paper No. 28. Geneva, World Health Organization, 2000. Available at:  
[http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)

244. Evans DB, Tandon A, **Murray CJL**, Lauer JA. *The comparative efficiency of national health systems in producing health: an analysis of 191 countries*. Global Programme on Evidence for Health Policy Discussion Paper No. 29. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
245. Tandon A, **Murray CJL**, Lauer JA, Evans DB. *Measuring overall health system performance for 191 countries*. Global Programme on Evidence for Health Policy Discussion Paper No. 30. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
246. Ahmad OB, Boschi-Pinto C, Lopez AD, **Murray CJL**, Lozano R, Inoue M. *Age standardization of rates: a new WHO standard*. Global Programme on Evidence for Health Policy Discussion Paper No. 31. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
247. Bhargava A, Jamison D, Lau L, **Murray CJL**. *Modelling the effects of health on economic growth*. Global Programme on Evidence for Health Policy Discussion Paper No. 33. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
248. Baltussen R, Hutubessy R, Evans D, **Murray CJL**. *Uncertainty in cost-effectiveness analyses: probabilistic uncertainty analysis and stochastic league tables*. Global Programme on Evidence for Health Policy Discussion Paper No. 34. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
249. **Murray CJL**, Tandon A, Salomon JA, Mathers CD. *Enhancing cross-population comparability of survey results*. Global Programme on Evidence for Health Policy Discussion Paper No. 35. Geneva, World Health Organization, 2000. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
250. **Murray CJL**, Lopez AD. *Progress and directions in refining the global burden of disease approach: a response to Williams*. Global Programme on Evidence for Health Policy Discussion Paper No. 1. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
251. **Murray CJL**, Salomon JA, Mathers CD. *A critical examination of summary measures of population health*. Global Programme on Evidence for Health Policy Discussion Paper No. 2. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
252. Salomon JA, Gakidou E, **Murray CJL**. *Methods for modeling the HIV/AIDS epidemic in sub-Saharan Africa*. Global Programme on Evidence for Health Policy Discussion Paper No. 3. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
253. **Murray CJL**, Evans D, Acharya A, Baltussen R. *Development of WHO guidelines on generalised cost-effectiveness analysis*. Global Programme on Evidence for Health Policy Discussion Paper No. 4. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)

254. Gakidou E, **Murray CJL**, Frenk J. A framework for measuring health inequality. Global Programme on Evidence for Health Policy Discussion Paper No. 5. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
255. **Murray CJL**, Frenk J. *A WHO framework for health system performance assessment*. Global Programme on Evidence for Health Policy Discussion Paper No. 6. Geneva, World Health Organization, 1999. Available at: [http://www3.who.int/whosis/discussion\\_papers/discussion\\_papers.cfm](http://www3.who.int/whosis/discussion_papers/discussion_papers.cfm)
256. Govindaraj R, **Murray CJL**, Chellaraj G. *Health expenditures in Latin America*. Technical Paper, 274. Washington, DC: World Bank, 1995.

## Research Support

### *Ongoing*

S3490-23/23, (10/1/2004-9/30/2007), CDC.

Disease Burden Attributable to Major Risk Factors in the United States.

This project aims to estimate burden of disease attributable to selected major risk factors in the United States, nationally and sub-nationally. The project goals are to estimate mortality and burden of disease attributable to selected major risk factors in the U.S., to estimate the distributions of total and risk-factor-attributable disease burden by race and state, and to estimate trends in risk factor exposure and risk-factor-attributable disease burden.

Role: Principle Investigator

Mexican Ministry of Health (7/1/04-12/31/06)

Mexico Cooperative Agreement

The research included in this project is a necessary prerequisite for laying a strong foundation for a comprehensive and evidence-based analytic framework to guide development of Mexico's future health system, including efficient allocation of resources, and investments in new technology.

Role: Principle Investigator.

Bill and Melinda Gates Foundation (7/2005-6/2010)

Grand Challenge 13. "Population Health Metrics Research Consortium Project."

The purpose of this project is to create global health solutions that can be made available at affordable prices to those most in need in the developing world, emphasizing new survey instruments, modeling, and biomarker strategies.

Role: Principle Investigator.

P01 AG-17625 (9/01/02-8/31/06), NIH/NIA.

The Global Burden of Disease 2000 in Aging Populations

This project investigates ways to strengthen the methodological and empirical basis for undertaking comparative assessments of health problems, their determinants and consequences in aging populations.  
Role: Principle Investigator.