

CURRICULUM VITAE

University of Alabama at Birmingham School of Medicine Faculty

Date: March 18, 2004

PERSONAL INFORMATION:

Name: Robert Maccabee Centor, M.D.

RANK/TITLE: Professor
Department: Medicine
Business Address: UAB Department of Medicine
Division of General Internal Medicine
Room 621 - Medical Education Building
Birmingham, Alabama 35294-3296
Email: rcentor@uabmc.edu

Phone: (205) 975-4889

EDUCATION:

Medical College of Virginia	M.D.	May 1975
University of Virginia	B.A (with Honors in Psychology)	June 1971

MILITARY SERVICE: n/a

LICENSURE: Virginia, #0101-027676
Alabama, #17762

BOARD CERTIFICATION: American Board of Internal Medicine, 1978

POSTDOCTORAL TRAINING:

1990	Stanford Faculty Development Program in Preventive Medicine	Stanford Palo Alto, California
7/1/80-6/30/81	Chief Medical Resident	Medical College of Virginia Richmond Virginia
7/1/78-6/30/79	Renal Research Fellowship	University of Texas Health Science Center at Dallas, Dallas, Texas
7/1/75-6/30/78	Resident in Internal Medicine	Medical College of Virginia Richmond, Virginia

ACADEMIC APPOINTMENTS:

5/99-Present	Scientist - Secondary Appointment Center for Outcomes and Effectiveness Research and Education, Office of the Provost University of Alabama at Birmingham
7/98-Present	Associate Dean for Continuing Medical Education,

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	University of Alabama at Birmingham
7/96- 6/98	Interim Dean, University of Alabama School of Medicine, Tuscaloosa, Alabama
7/93-Present	Professor and Director, Division of General Internal Medicine, University of Alabama at Birmingham
7/93-Present	Associate Dean for Primary Care, School of Medicine, University of Alabama at Birmingham
7/92-6/93	Professor, Division of General Internal Medicine, Medical College of Virginia, Richmond, Virginia
7/87-7/92	Associate Professor, Division of General Internal Medicine, Medical College of Virginia, Richmond, Virginia
7/86-7/93	Chairman, Division of General Internal Medicine, Department of Internal Medicine, Medical College of Virginia, Richmond, Virginia
7/89-7/92	Director, Internal Medicine Education, St. Mary's Hospital, Richmond, Virginia
7/86-7/87	Associate Chairman of Internal Medicine (for Housestaff Affairs), Medical College of Virginia, Richmond, Virginia
7/83-7/86	Associate Director of Internal Medicine Housestaff Training Program, Medical College of Virginia, Richmond, Virginia
7/81-7/87	Assistant Professor, Division of General Internal Medicine and Primary Care, Medical College of Virginia, Richmond, Virginia
7/79-7/81	Instructor, Division of General Internal Medicine and Primary Care, Medical College of Virginia, Richmond, Virginia

AWARDS/HONORS:

1984-87	American College of Physicians Teaching and Research Scholarship
1995	Excellence in Teaching Award, University of Alabama at Birmingham Birmingham, Alabama (Medical Student Award)
1994-95	Top Ten Teacher Award, University of Alabama at Birmingham, Birmingham, Alabama
1996-97	(Housestaff Award)
1997	The Award for Distinguished Service presented by the Society for Medical Decision Making
1999-2000	Best Overall Clinical Instructor MS IV Award – Class of 2000
1999-2000	Tinsley Harrison - Outstanding Teacher Award
1999-2000	Top Ten Teacher Award
2000-2001	Class of 2002 award as Best Medicine Attending
2000-2001	Tinsley Harrison - Outstanding Teacher Award
2001	Argus Awards –Excellence in Teaching Clinical Medicine Attending
2002	Decker Prize Winner for 2002 For Best Original research paper published in the Journal of Continuing Education in the Health Professions

PROFESSIONAL SOCIETIES:

National Board of Medical Examiners

1997-98	<i>Member United States Medical Licensing Examination (USMLE) Step 2 Test Material Development Committee for Medicine</i>
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American College of Physicians

1978-85	Member
1985-	Fellow
1986	Scientific Program Committee, Va. Regional Meeting
1990-94	Medical Informatics Committee
1990-94	MKSAP Planning Committee (Liaison from Medical Informatics Committee)

Society for Medical Decision Making

1980-	Member
1982,84, 85&94	Scientific Program Committee
1984	Nominating Committee
1985	Student Prize Committee, Chairman
1986/87	Student Prize Committee, Member
1986	Coordinator, Introductory Course on Medical Decision Making
1988	Co-Chairman, National Meeting
1991-92	President-Elect
1992-93	President
1993-95	Nominating Committee

Association of Chiefs in General Internal Medicine

2001-2002	President
2000-Present	Member

American Federation for Clinical Research

1980-	Member
1985	Scientific Program Committee Southern Section
1993	Scientific Program Committee, National Meeting

Society of General Internal Medicine

1980-	Member
1985-88	By-Laws Committee
1984-92	Microcomputer User's Group, Steering Committee
1986/87	Scientific Program Committee, National Meeting
1989-92	Finance Committee
1987	Southern Section, Nominating Committee, Member
1988	Southern Section, Nominating Committee, Chairman
1988	Chairman, National Meeting
1988-89	Special Assistant to the President
1989-90	Secretary-Treasurer Elect
1990-91	Secretary-Treasurer
1993-	Long Range Planning Committee
1999	Bylaws Committee

Association of Program Directors in Internal Medicine

1983-	Member
1985	Faculty, 2nd Workshop for Chief Residents and Program Directors

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1986	Faculty, 3rd Workshop for Chief Residents and Program Directors
1986-	Ambulatory Care Committee
1988	Faculty, Spring Meeting

Alabama Chief Medical Residents Society

1993-	Member
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Southern Society for Clinical Investigation

2003-	Member
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COUNCILS AND COMMITTEES:

Selected Major Committees

1979-86	M-III Internal Medicine Curriculum
1979-81	MCV Cost Containment Grant Advisory
1979-81	MCV Hospital Computer Advisory
1984	MCV Emergency Room Committee
1984-87	Department of Internal Medicine, Clinical Activities
1980-93	Internship Selection
1986	Ad Hoc Residency Curriculum
1983-87	Chairman, Clinical Competency
1988	Search Committee for Family Practice Department Chairman
1988	Promotion Committee for Dr. Paul Mazmanian
1989	Tenure and Promotion Committee for Dr. Fred Meier
1989	Promotion and Tenure Committee, Department of Internal Medicine
1991-93	M-I Clinical Epidemiology, Prevention Medicine Biostatistics Course Director
1989-93	St. Mary's Hospital Committees, Institutional Review Board
1990-93	St. Mary's Hospital Committees, Medical Library
1993	UAB Department of Medicine Internship Selection Committee
1994	Chairman, Steering Committee, Alabama Quality Assurance Foundation
1994	UAB Medical School Admissions Committee
1994	Information Technology Advisory Group (UAB)
1995	Chairman, TDS Improvement Committee
1999	Chairman, Bylaws Committee Society of General Internal Medicine
2000	Institute of Medicine Committee on Small Numbers

OTHER SIGNIFICANT SCHOLARLY, RESEARCH OR ADMINISTRATIVE EXPERIENCE:

1984/85	National Conference for Chief Medical Residents, Ann Arbor, Michigan, Course Planning Committee & Faculty
1984	Program Director, Highland Retreat (CME Course)
1985	Invited Participant, Veterans Administration Hospital Conference on Decision Support Technology, Salt Lake City
1987-93	Program Director, Practical Internal Medicine at Virginia Beach (yearly CME Course)
1986-90	Member, Health Care Technology Assessment Study Section, National Center

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1988-89	for Health Services Research (Agency for Health Care Policy and Research) Planning Committee 1989 CDC Institute - Improving the Quality of Patient Care through Physician - Laboratorian Teamwork
1989	Testified before Congressional Subcommittee concerning funding for Health Services Research for American College of Physicians
1989	Chairman, Special Study Section NIH Grant 2 R44 HL37162-02A1
1990	Invited Participant, AHCPR sponsored Primary Care Research Conference
1991	Health Care Financing Administration/Public Health Service Primary Care Conference Planning Committee
1994-96	Member, Special Emphasis PORT II Study Section, Agency for Health Care Policy and Research
1996	Chair, Primary Care Referral Special Emphasis Panel, Agency for Health Care Policy and Research
1996	Chair, Outcomes Research Work Group in Strategic Planning
1994- Present	Clinical Panel Chair, Medicare Quality Indicator System, Urinary Tract Infection Module, Alabama Quality Assurance Foundation
1996-1998	Panelist, <u>Practical Reviews in Internal Medicine</u> , Monthly Audiocassette. Robert Kreisberg, M.D., Editor.
1999	Chair, Bylaws Committee for the Society of General Internal Medicine
2002	Membership, Alpha Omega Alpha Honor Medical Society, University of Alabama School of Medicine

EDITORIAL BOARD MEMBERSHIPS:

1983-88	Editorial Board, Medical Decision Making
1989-91	Associate Editor, Medical Decision Making
1985-	Reviewer, JAMA
1986-	Reviewer, Journal of General Internal Medicine
1986-	Reviewer, Annals of Internal Medicine
1986-	Reviewer, Medical Care
1990-	New England Journal of Medicine
1994-	American Journal of Medicine
1995-	Editorial Board, Journal of General Internal Medicine

GRANT SUPPORT (PAST AND CURRENT):

1990-94	Co-Investigator, "Predictions and outcomes in congestive heart failure," Agency for Health Care Policy and Research, HS06247
1997-00	Impact of Guidelines on Quality of Care: Unstable Angina. Role – Co- Investigator @ 10% Private Investigator - Catarina I. Kiefe, Ph.D., M.D. Period of Funding 9/30/97 – 9/29/00 Amount: 3 year 1,231,738.00 Agency for Health Care Policy and Research
1999-01	Improving Primary Care Management of Depression and Distress. Role Co-PI @ 5% effort. Private Investigator - Joshua Klapow, Ph.D. Period of Funding

01/01/99-06/30/01. Amount: 2.5 years 300,000.00 SmithKline Beecham Pharmaceuticals, Quality Care Research Fund.

INVITED PAPER:

1984 Blue Cross - Blue Shield Medical Necessity Project on Diagnostic Tests: Throat Culture for Beta Streptococci.

COMMUNITY SERVICE:

1983-86 Board of Directors, Jewish Community Center
1982-87 Board of Directors, Beth Sholom Nursing Home
1987-88 Board of Directors, Beth Sholom Nursing Home, Assistant Treasurer
1988-89 Board of Directors, Beth Sholom Nursing Home, Treasurer
1989-91 Board of Directors, Beth Sholom Nursing Home, Second Vice-President
1991-93 Board of Directors, Beth Sholom Nursing Home, First Vice-President
1985-93 Board of Governors, Beth Sholom Geriatrics Services of Virginia

BIBLIOGRAPHY:

Articles - Peer Reviewed

1. Horgan JH, Beachley MC, Kemmp VE, Greenfield LJ, Behm FG, Centor RM, Goodman AC. Primary and secondary right atrial tumors detected by echocardiography. J Clin Ultrasound 5(2):92-5, 1977.
2. Centor RM, Witherspoon JM, Dalton HP, Brody CE. The diagnosis of strep throat in adults in the emergency room. Med Decis Making 1(3):239-46, 1981.
3. Centor RM, Witherspoon JM. Treating sore throats in the emergency room. The importance of follow-up in decision making. Med Decis Making 2(1):463-9, 1982.
4. Centor RM, Gardner DF. The case for tight control of diabetes mellitus. Va Med Monthly 110(1):26-30, 1983.
5. Centor RM, Yarbrough B, Wood JP. Inability to predict relapse in acute asthma. N Engl J Med 310(9):577-80, 1984.
6. Link K, Centor RM, Buchsbaum D, Witherspoon J. Why physicians don't pursue abnormal laboratory tests: an investigation of hypercalcemia and the follow-up of abnormal test results. Human Pathol 15(1):75-8, 1984.
7. Fowler AA, Fisher BJ, Centor RM, Carchman RA. Development of the adult respiratory distress syndrome: progressive alteration of neutrophil chemotactic and secretory processes. Am J Pathol 116(3):427-35, 1984.
8. Centor RM. A Visicalc program for estimating the area under a receiver operating characteristic

- (ROC) curve. *Med Decis Making* 5:139-48, 1985.
9. Centor RM, Schwartz JS. An evaluation of methods for estimating the area under the receiver operating characteristic (ROC) curve. *Med Decis Making* 5:149-56, 1985.
 10. Centor RM. Receiver operating characteristic (ROC) curve analysis using microcomputer spreadsheets. *SCAMC Proceedings* 9:207-11, 1985.
 11. Wigton RS, Connor JL, Centor RM. Transportability of a decision rule for the diagnosis of streptococcal pharyngitis. *Arch Intern Med* 146(1):81-3, 1986.
 12. Deyo RA, Centor RM. Assessing the responsiveness of functional scales to clinical charge: an analogy to diagnostic test performance. *J Chronic Dis* 39(11):897-906, 1986.
 13. Centor RM, Dalton HP, Campbell MS, Lynch MR, Watlington AT, Garner BK. Rapid diagnosis of streptococcal pharyngitis in adult emergency room patients. *J Gen Intern Med* 1(4):248-51, 1986.
 14. Buchsbaum D, Groh M, Centor RM. Underdocumentation of benzodiazepine prescriptions in a general medicine clinic. *J Gen Intern Med* 1(5):305-8, 1986.
 15. Hartz A, Centor RM. Measures of the value of a diagnostic test derived from stochastic thresholds. *Med Decis Making* 6(3):149-53, 1986.
 16. Hartz A, McKinney WP, Centor R, Krieg A, Simms G, Henck S. Stochastic thresholds. *Med Decis Making* 6(3):145-8, 1986.
 17. Centor RM, Meier FA, Dalton HP. Throat cultures and rapid tests for diagnosis of group A streptococcal pharyngitis. *Ann Intern Med* 105(6):892-9, 1986.
 18. Gelfman DM, Witherspoon JM, Buchsbaum DG, Centor RM. Short-term results of an immunization compliance program. *Va Med Monthly* 113(9):532-4, 1986.
 19. Graham L Jr, Meier FA, Centor RM, Garner BK, Dalton HP. Effect of medium and cultivation conditions on comparisons between latex agglutination and culture detection of group A streptococci. *J Clin Microbiol* 24(4):644-6, 1986.
 20. Hillner BE, Centor RM. What a difference a day makes: a decision analysis of adult streptococcal pharyngitis. *J Gen Intern Med* 2(4):244-50, 1987.
 21. Fowler AA, Hyers TM, Fisher BJ, Bechard DE, Centor RM, Webster RO. The adult respiratory distress syndrome: cell populations and soluble mediators in the air spaces of patients at high risk. *Am Rev Respir Dis* 136(5):1225-31, 1987.
 22. Centor RM. Guest Editorial: Strategies for treating adult sore throat patients. *J Fam Practice* 25(4):335-6, 1987.
 23. Clancy CM, Centor RM, Campbell MS, Dalton HP. Rational decision making based on history:

- adult sore throats. *J Gen Intern Med* 3(3):213-7, 1988.
24. Gardner DF, Centor RM, Utiger RD. Effects of low dose oral iodide supplementation on thyroid function in normal men. *Clin Endocrinol* 28(3):283-8, 1988.
 25. Poses RM, Cebul RD, Centor RM. Evaluating physicians' probabilistic judgments. *Med Decis Making* 8(4):233-40, 1988.
 26. Centor RM, Keightley GE. Receiver operating characteristic (ROC) curve area analysis using the ROC ANALYZER. *SCAMC Proceedings* 13:222-6, 1989.
 27. Slap GB, Vorters DF, Chaudhuri S, Centor RM. Risk factors for attempted suicide during adolescence. *Pediatrics* 84(5):762-72, 1989.
 28. Centor, RM. Hearing Before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives. One Hundred First Congress First Session on H.R. 2601. 6/16/89. Serial No. 101-67. US Government Printing Office 1989.
 29. Buchsbaum D, Clancy C, Centor R, Buchanan R. Houseofficer attitudes, beliefs and recording behavior associated with prescribing minor tranquilizers. *Teaching and Learning in Medicine* 2:30-3, 1990.
 30. Meier FA, Centor RM, Graham L Jr, Dalton HP. Clinical and microbiological evidence for endemic pharyngitis among adults due to group C streptococci. *Arch Intern Med* 150(4):825-9, 1990.
 31. Kaplan CB, Centor RM. The use of nurses to evaluate houseofficers' humanistic behavior. *J Gen Intern Med* 5(5):410-4, 1990.
 32. Centor RM. Signal detectability: the use of ROC curves and their analysis. *Med Decis Making* 11(2):102-6, 1991.
 33. Buchsbaum DG, Buchanan RG, Centor RM, Schnoll SH, Lawton MJ. Screening for alcohol abuse using CAGE scores and likelihood ratios. *Ann Intern Med* 115(10):774-7, 1991
 34. Centor RM. Estimating confidence intervals of likelihood ratios. *Med Decis Making* 12(3): 229-33, 1992.
 35. Buchsbaum DT, Buchanan RG, Centor RM. Interpreting CAGE scores. Response. *Ann Intern Med* 116:1032-3, 1992
 36. Buchsbaum DG, Buchanan RG, Welsh J, Centor RM, Schnoll SH. Screening for drinking disorders in the elderly using the CAGE questionnaire. *J Am Geriatr Soc* 40(7):662-5, 1992.
 37. Poses RM, Cebul RD, Wigton RS, Centor RM, Collins M, Fleischli G. Controlled trial using computerized feedback to improve physicians' diagnostic judgments. *Acad Med* 67:345-7, 1992.

38. Altaie SS, Meier FA, Centor RM, Wakabongo M, et al. Evaluation of two ELISA's for detecting Chlamydia trachomatis from endocervical swabs. *Diagn Microbiol Infect Dis* 15(7):579-86, 1992.
39. Poses RM, Wigton RS, Cebul RD, Centor RM, Collins M, Fleischli GJ. Practice variation in the management of pharyngitis: the importance of variability in patients' clinical characteristics and in physicians' responses to them. *Med Decis Making* 13(4):293-301, 1993 Oct-Dec.
40. Ashworth CS, Fargason CA Jr., Fountain K, Cutter G, Centor R. Impact of patient history on residents' evaluation on child sexual abuse. *Child Abuse & Neglect* 19(8):943-51, Aug. 1995.
41. Morgan JM, Capuzzi DM, Guyton JR, Centor, RM, Goldberg R, Robbin DC, DiPette D, Jenkins S, Marcovina S. Treatment effect of Niaspan, a controlled-release Niacin, in patients with hypercholesterolemia: A placebo-controlled trial. *J Cardiovasc Pharmacol Therapeut* 1(3):195-202, 1996.
42. Allison JJ, Centor RM. Why models predicting bacteremia in general medical patients do not work. *JGIM* 1996; 11(2): 132-4.
43. Poses RM, Smith WR, McClish DK, Huber EC, Clemo FLW, Schmitt BP, Alexander-Forti D, Racht EM, Colenda CC, Centor RM. Physicians' Survival Predictions for Patients with Acute Congestive Heart Failure. *Arch Intern Med* 1997;157:1001-1007.
44. Allison JJ, Kiefe CI, Centor RM, Box JB, Farmer RM. Racial Differences in the Medical Treatment of Elderly Medicare Patients with Acute Myocardial Infarction: Analysis of the Cooperative Cardiovascular Pilot Data for Alabama. *J Gen Int Med*; 1996;511(12):736-43.
45. Poses RM, McClish DK, Smith WR ...Centor RM. Physicians' Judgments of the Risks of Cardiac Procedures. Differences Between Cardiologists and Other Internists. *Med Care* 1997;35(6):603-617.
46. Heudebert GR, Marks R, Wilcox CM, Centor RM. Choice of Long Term Strategy for the Management of Patients with Severe Esophagitis: A Cost-Utility Analysis *Gastroenterology* 112(4): 1078-86, 1997.
47. Fargason CA, Peralta-Carcelen MC, Fountain KE, Amya MI, Centor R. Impact of Uncertainty on Non-Medical Professionals' estimates of Sexual Abuse Probability. *Journal of Child Sexual Abuse*, 6(3):49-65, 1997.
48. Centor R, Casebeer L, Klapow J. Using a combined CME course to improve physicians' skills in eliciting patient adherence. *Academic Medicine* 73(5):609-10, 1998 May.
49. Centor RM, Casebeer L, Klapow J. Improving Physician Skills in Patient Adherence Through a Combined CME Intervention. "In Progress" *Academic Medicine*, 73:5; 609-610 May 1998.
50. Balas EA, Kretschmer RAC, Gnann W, West DA, Boren SA, Centor RM, Nerlich M, Gupta M. Interpreting Cost Analyses of Clinical Interventions. *JAMA* January 7, 1998; 279:1: 54-56.

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51. Klapow J., Skrinar A., Heudebert G., Centor R. Management of GERD: An empirical validation of cost-effectiveness model assumptions. *Annals of Behavioral Medicine*; 1998;20:122.
52. Allison JJ, Kiefe CI, Cook EF, Gerrity MS, Orav EJ, Centor RM. The Association of Physician Attitudes about Uncertainty and Risk Taking with Resource Use in a Medicare HMO. *SMDM*, Jul-Sep 1998;18:3;320-9.
53. Poses RM, Chaput De Saintonge M, McClish DK, Smith WR, Huber EC, Clemo FL, Schmitt BP, Alexander-Forti D, Racht EM, Colenda CC, Centor RM. An International Comparison of Physicians' Judgements of Outcome Rates of Cardiac Procedures and Attitude Toward Risk, Uncertainty, Justifiability, and Regret. *Med Decis Making* 1998;18:131-140.
54. Hoesley C, Centor RM, Heudebert GR. Use of statistics and scientific inference: odds ratios, likelihood ratio, and receiving operating characteristic curves. *J Infect Dis.* Sep. 1998 178(3):921-3.
55. Allison JA, Kiefe CI, Weissman NW, Carter J, Centor RM. The Art and Science of Searching Medline To Answer Clinical Questions. *International Journal of Technology Assessment in Health Care.* 1999;15:2 281-286.
56. Casebeer LC, Klapow JC, Centor RM, Stafford MA, Renkl LA, Mallinger AP, Kristofco RE. An Intervention to Increase Physicians' Use of Adherence-enhancing Strategies in Managing Hypercholesterolemic Patients. *Academic Medicine.* 1999;74:12:1334-1339.
57. Heudebert GR, Centor RM, Klapow JC, Marks R, Johnson L, Wilcox CM. What is Heartburn Worth? A Cost-Utility Analysis of Management Strategies. *J Gen Intern Med* 2000;15:175-182.
58. Allison JJ, Kiefe CI, Weissman NW, Person SD, Rousculp M, Canto JG, Bae S, Williams OD, Farmer R, Centor RM. Relationship of Hospital Teaching Status, Quality of Care, and Mortality for Medicare Patients With Acute MI. *JAMA.* 2000;284(10):1256-1261.
59. Call SA, Klapow JC, Stewart KE, Westfall AO, Mallinger AP, DeMasi RA, Centor RM, Saag MS. Health-related quality of life and biologic outcomes in an HIV clinic. *Quality of Life Research.* 9(9): 977-85, 2000.
60. Canto JG, Fincher C, Kiefe CI, Allison JJ, Li Q, Funkhouser E, Centor RM, Selker HP, Weissman NW. Atypical presentations among Medicare beneficiaries with unstable angina pectoris. *American Journal of Cardiology.* 90(3): 248-53, 2002 Aug 1.
61. Casebeer L, Bennett N, Kristofco R, Carillo A, Centor R. Physician Internet medical information seeking and on-line continuing education use patterns. *Journal of Continuing Education in the Health Professions.* 22(1): 33-42, 2002 Winter.
62. Klapow JC, Wilcox CM, Mallinger AP, Marks R, Heudebert GR, Centor RM, Lawrence W, Richter J. Characterization of long-term outcomes after Toupet fundoplication: symptoms, medication use, and health status. *Journal of Clinical Gastroenterology.* 34(5):509-15, 2002 May-Jun.

63. Centor RM, Allison JA, Weissman NW, Canto J, Heudebert GR, Juarez L, Kiefe C. Diffusion of troponin testing in unstable angina patients: adoption prior to guideline release. *Journal of Clinical Epidemiology* 2003;56:1236-1243.
64. Huddle TS, Centor RM, Heudebert GR. American Internal Medicine in the 21st Century. Can an Oslerian Generalism Survive? *J Gen Intern Med* 2003;18:764-767.
65. Person SD, Allison JJ, Kiefe CI, Weaver MT, Williams OD, Centor RM, Weissman NW. Nursing Staffing and Mortality for Medicare Patients with Acute Myocardial Infarction. *Medical Care* 2004;42:4-12.

Articles - other

1. Centor RM, Littman BH, Jasnosz KM. Morbidity and mortality conference: infection and Felty's syndrome. *Va Med Monthly* 108:609-14, 1981.
2. Centor RM. Emergency Management of Asthma. *Emergency Reports* 3:85-90, 1982.
3. Centor RM, Ruoff GE, Selner JG. Sore throat: streptococcal or not? (E. Richman, ed) *Patient Care* 21:28-63, 1987.
4. Centor RM, Meier FA. Adult pharyngitis: when is treatment necessary? (Response to a question in "Questions and Answers") *JAMA* 261:1643, 1989.
5. Centor RM. Commentary on "Feedback and Clinical Judgment." *SGIM News* 13:Number 6:page 6, June 1990.
6. Centor RM. Primary care research: a perspective from general internal medicine. in: *Primary Care Research: An Agenda for the 90s*, ed., Mayfield J, Grady ML. Agency for Health Care Policy and Research, Conference Proceedings. 31-4, 1990.
7. Centor RM, Levinson W. Hold the SGIM and APCR meetings at different times. *SGIM News* 14:Number 4:page 4, April 1991.
8. Centor RM, Ruoff GE. Is it strep throat - or not? (WB Millard, ed) *Patient Care* 25:69-92, 1991.
9. Centor RM, Beck JR. In honor of Lee Lusted (editorial). *Med Decis Making* 11:75, 1991.
10. Hoesley C, Centor RM, Heudebert GR. [Comment Letter] Use of statistics and scientific inference: odds ratios, likelihood ratio, and receiving operating characteristic curves. *Journal of Infectious Diseases*. 178(3):921-3. 1998 Sep.
11. Centor, RM. Guest Editor. Management of Congestive Heart Failure for Primary Care Physicians. CME by FAX: A newsletter for Alabama Primary Care Physicians. April 8, 1999. Sponsored by the University of Alabama School of Medicine Division of Continuing Medical Education.

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12. Centor, RM. Why ACGIM – My Personal Exploration. SGIM Forum. 2001;24(9): pp 2 & 9.
13. Centor, RM. Three Books for Leaders. SGIM Forum. 2002; 25(2): pp 2 & 6.
14. Centor, RM. Erstwhile Triple Threat (editorial). JGIM 2002; 17(7):572-537.
15. Centor, RM. General Internal Medicine: Evolution of A Discipline. Plenary Address SGIM Forum 2002; 25(7): pp 5 & 15.
16. Centor, RM. The Wall Street Journal Health Matters – Cholesterol drugs may cause side effects that mimic aging. The Wall Street Journal December 16, 2002.
17. Centor, RM. Finding Your Path. SGIM Forum 2003; 26(2):5.
18. Centor, RM. The Whole Pie-On the Fragmentation of General Internal Medicine. SGIM Forum 2003; 25(5): pp 4 & 9.
19. Centor, RM. Downstream Revenue: A Dilemma for Academic Divisions of General Internal Medicine. ACGIM Column 2003: pp 5&7.

Books/Chapters

1. Sica DA, Centor RM: Renal function tests in the elderly. in: Geriatric Urology and Nephrology, eds., Zawada ET, Sica DA, Wright J. DSG, ltd, Littleton, Massachusetts, 1985.
2. Centor RM, Meier FA, Dalton HP: Throat cultures and rapid tests for diagnosis of group A streptococcal pharyngitis. in: Common Diagnostic Tests: Use and Interpretation, ed., Sox HC. American College of Physicians, Philadelphia, PA, 218-37, 1987.
3. Centor RM: Serum total CO₂ content. in; Clinical Methods (3rd edition), eds., Walker HK, Hall WD, Hurst JW., 888-9, 1990.
4. Centor RM, Meier FA, Dalton HP: Throat cultures and rapid tests for diagnosis of group A streptococcal pharyngitis in adults. in: Common Diagnostic Tests: Use and Interpretation (2nd edition), ed., Sox HC. American College of Physicians, Philadelphia, PA, 245-64, 1990.
5. Meier FA, Centor RM. An introduction to rapid antigen detection of group A beta-hemolytic streptococci. in: Proceedings of the 1989 Institute on critical issues in health laboratory practice: Improving the quality of health management through clinician and laboratorian teamwork, eds., Martin ML, Addison BV, Wagner WM, Essien JDK. Wilmington, DL, 85-91, 1991.
6. Centor RM, Meier FA. Sore throat. in: Manual of Clinical Problems in Adult Ambulatory Care (2nd edition), ed., Dornbrand L. Little, Brown and Company, Boston, 70-75, 1992.
7. Centor RM. Pharyngitis, in: Outpatient Medicine, eds., Fihn SD, McGee SR. W.B. Saunders. Philadelphia, PA. 148-150, 1992.

8. Centor RM. Sore throat. in: Manual of Clinical Problems in Adult Ambulatory Care (3rd edition), ed., Dornbrand L, Hoole AJ, Fletcher RH. Lippincott-Raven:Philadelphia 76-82,1997.
9. Small Clinical Trials – Issues and Challenges. Institute of Medicine National Academy Press, Washington DC. Committee on Strategy for Small Numbers: S. Ildstad, R. Centor, E. Davis, B. Levin, E. Miller, I Olkin, D. Tollerud, P. Tugwell. June 2001. ISBN 0309073332.
10. Casebeer L, Centor R, Kristofco R. Learning in Large and Small Groups. The Continuing Professional Development of Physicians From Research to Practice. Eds., Davis D, Barnes BD, Fox R. AMA Press. Chapter 9 - pgs.169-190 May, 2003. ISBN 1-57947-403-9.

Presented Abstracts

1. Centor RM, Abel P, Wood J, et al. ST-T segment analysis of the exercise electrocardiogram in normal subjects at varying serum digoxin levels. Circulation 52:Suppl II:48,1975.
2. Centor RM, Witherspoon JM. Effects of unreliable follow-up on testing and treatment decisions. Med Decis Making 1:440,1981.
3. Centor RM, Witherspoon JM. The importance of follow-up in emergency room decision making. Clinical Research 29:634A,1981.
4. Chan CW, Centor RM, Witherspoon JM. Coronary arteriography is indicated for patient s with stable angina (a decision analytic approach). Clinical Research 29:826A,1981.
5. Link K, Centor RM, Buchsbaum D. Why physicians fail to investigate abnormal laboratory tests: the case of hypercalcemia. Med Decis Making 2:359,1982.
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7. Wigton RS, Connor JL, Centor RM. Transportability of a decision rule for pharyngitis. Clinical Research 31:305A,1983.
8. Fowler AA, Fisher BJ, Centor RM, Coles RB, Carchman RA. Peripheral neutrophils in the adult respiratory distress syndrome show depressed chemotaxis and elevated lysozomal enzyme release. Am Rev Resp Dis 127:2715,1983.
9. Centor RM, Schwartz JS. Use of an electronic spreadsheet (Visicalc) to estimate the area under the ROC curve. Med Decis Making 3:380,1983.
10. Centor RM, Wigton RS, Connor JL. Validation of a logistic regression model for group A beta strep using ROC curve analysis. Med Decis Making 3:391,1983.
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16. Centor RM, Dalton HP, Lynch MR, Campbell MS. Can we modify physicians' probability estimates? Clinical Research 32:879A,1984.
17. Centor RM, Dalton HP, Yates JF. Are physicians' probability estimates better or worse than regression model estimates? Med Decis Making 4:538,1984.
18. Centor RM, Garner BK, Campbell MS, Lynch MR, Dalton HP. The importance of non-group A streptococci in adults complaining of a sore throat. Clinical Research 33:245A,1985.
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21. Sica D, Centor RM, Brater C, Miller G. Relationship between tubular delivery of metolazone and natriuresis. Clinical Research 33:288A,1985.
22. Hillner BE, Centor RM, Clancy CM. What a difference a day makes: the importance of turnaround time of diagnostic tests in sore throats. Med Decis Making 5:363,1985.
23. Centor RM, Dalton HP, Clancy CM, Hillner BE. A new model for predicting the probability of group A beta hemolytic streptococcal pharyngitis. Med Decis Making 5:383,1985.
24. Centor RM, Clancy CM, Buchsbaum DG, Dalton HP. The influence of health care delivery site on disease presentation. Clinical Research 34:183A, 1986.
25. Campbell MS, Clancy CM, Centor RM, Dalton HP. Rational clinical decision making by telephone: adult sore throats. Clinical Research 34:269A,1986.
26. Meier FA, Centor RM, Dalton HP, Hillner BE, Clancy CM. The effect of a rapid antigen detection test (ADT) on a clinical strategy for diagnosing group A streptococcal pharyngitis (GrASP). Med

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29. Johnson BA, Meier FA, Dalton HP, Reppert BR, Centor RM, Clancy CM. Strategies for diagnosing chlamydia trachomatis cervicitis in university women. Clinical Research 35:745A,1987.
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31. Slap G, Vorters D, Chadhour S, Centor R. Identification of suicidal adolescents. Med Decis Making 7:283,1987.
32. Hillner BE, Meier FA, Centor RM, Dalton HP. Rapid streptococcal testing in the emergency room - is it different from the lab? Clinical Research 36:713A,1988.
33. Poses RM, Cebul RD, Centor RM, Wigton RS. Improving physicians' diagnostic ability may not improve decisions. Clinical Research 36:716A,1988.
34. Hillner BE, Centor RM. Hitting the moving target. A decision analysis of the evolving role of rapid tests in streptococcal pharyngitis. Clinical Research 37:83A,1989.
35. Poses RM, Cebul RD, Wigton RS, Centor RM, Collins M, Fleischli G. A controlled trial to improve physicians' probabilistic judgments. Clinical Research 37:813A,1989.
36. Poses RM, Wigton RS, Cebul RD, Centor RM, Collins M, Fleischli G. Practice variations in the treatment of pharyngitis. Clinical Research 37:800A,1989.
37. JC Klapow, G Heudebert, A Skrinar, R Centor. Symptoms, Medication Use, and Health Status Following LNF: Validation of Cost-effectiveness Model Assumptions. SMDM 1997.
38. RM Centor, GR Heudebert. Cost of the Screening and Surveillance: Comparison with Other Situations. Columnar Lined (Barrett's) Esophagus. September 27-29, 1998 Under the auspices of the Department of Veterans Affairs and NIH. Boston, Massachusetts.
39. GR Heudebert, RM Centor, R Marks, CM Wilcox. Endoscopy In Chronic Heartburn To Screen For Barrett's Esophagus (BE): Can We Really Afford It? American College of Gastroenterology 1998 Annual Meeting October 12-14, 1998 Boston, Massachusetts.
40. RM Centor. A Methodology For Evaluating Crossing Receiver Operating Characteristic (ROC) Curves. Presented at the 20th Annual Society for Medical Decision Making Meeting 10/24-10/28, 1998 Cambridge, Massachusetts.

41. SA Call, J Klapow, RM Centor, M Saag, K Stewart. Health Related Quality of Life in HIV Positive Patients-Variation in Outcome Across Instruments. Presented at the 20th Annual Society for Medical Decision Making Meeting 10/24-10/28, 1998 Cambridge, Massachusetts.
42. Kristofco RE, Centor RM, Casebeer L. Shifting the Paradigm for Academic CME: Challenges, Opportunities, and Lessons from the Change Process. Presented at Association of American Medical Colleges 1999 Annual Meeting 10/22-10/28, 1999 Washington Hilton & Towers, Washington, DC.
43. Centor, RM, Allison JJ, Weissman, NW, Shaneyfelt TM, Heudebert GR, Kiefe, CI. Early Adoption of Troponin as a Prognostic Test is Associated with Appropriate Reductions in Cardiac Catheterization Rates for Medicare Patients Hospitalized with Unstable Angina. 23rd Annual Meeting of the Society of General Internal Medicine. 5/4-5/6/00.
44. Call SA, Barrett JC, Rousculp MD, Centor RM. Should Women be Screened for Activated Protein C Resistance Prior to Initiating Oral Contraceptives? A Markov Analysis. 23rd Annual Meeting of the Society of General Internal Medicine. 5/4-5/6/00.
45. Klapow JC, Centor RM, Renkl LA, Stafford MA, Casebeer. Primary care Physicians' Attitudes and Beliefs Regarding the Detection of Depression and Distress in Primary Care Patients. 23rd Annual Meeting of the Society of General Internal Medicine. 5/4-5/6/00.
46. Allison JJ, Kiefe CI, Weissman NW, Person S. The Achievable Benchmark of Care: An Effective and Inexpensive Enhancement to Provider Feedback. 23rd Annual Meeting of the Society of General Internal Medicine. 5/4-5/6/00.
47. Casebeer L, Renkl L, Klapow J, Centor R, Horton R, Kristofco R, Stafford M. Recruiting Practicing Physicians to CME Research . CME Congress 2000, Los Angeles, CA. April 12-16, 2000.
48. Peirce JC, Corbus R, Centor R, White R, Landefeld S, Warde C. Dealing with Change, Complexity, and Confusion. Society of General Internal Medicine Precourse Workshop PF-4. San Diego, California 5/2-3/2001.

Other presentations

1. Validating forecasting models in medicine, presented at the International Symposium on Forecasting. Philadelphia, Pennsylvania, June 1983.
2. Using microcomputer spreadsheet programs in clinical research, presented at SREPCIM national meeting, Washington, D.C., May, 1984.
3. Microcomputer use for chief medical residents, presented at the 2nd annual workshop for chief residents and program directors, Washington, D.C., April, 1985.

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4. Microcomputer statistical programs, presented at SREPCIM national meeting, Washington, D.C., May, 1985.
5. Panel on microcomputer programs for internal medicine research, presented at SREPCIM national meeting, Washington, D.C., May, 1986.
6. Workshop on geriatric decision making, presented at SREPCIM national meeting, Washington, D.C., May, 1986.
7. Chaired workshop on research in probability estimation at SREPCIM national meeting, San Diego, May, 1987.
8. Panel on the research agenda for general internal medicine, SREPCIM national meeting, San Diego, May, 1987.
9. Workshop on probability estimation at SMDM national meeting, Philadelphia, Oct, 1987.
10. Microcomputer users' group workshop at SGIM national meeting, Crystal City, Virginia, May, 1988.
11. "Adult pharyngitis" at ACP national meeting, San Francisco, California, 1989.
12. "Receiver Operating Characteristic (ROC) curves" - workshop at SGIM national meeting, Crystal City, Virginia, 1989.
13. Lecture and workshop on evaluation of diagnostic tests at SMDM national meeting, Minneapolis, Minnesota, 1989.
14. Centor RM, Hess ML, Williams RB, "Management of Congestive Heart Failure" (video recording), produced by Virginia Hospital Television Network, Office of Continuing Education in Medicine and Allied Health Professions, Medical College of Virginia, Virginia Commonwealth University (Richmond, Va): Medical College of Virginia/Virginia Commonwealth University, c1989.
15. Introduction to ROC curves, presented as part of the advanced course in Medical Decision Making at the MDM annual meeting, Boston, Mass, 1990.
16. Invited lecturer, Stanford Faculty Development Program for both Preventive Medicine and Medical Decision Making, February, 1991.
17. "Congestive Heart Failure", workshop presented at SGIM national meeting, May, 1991.
18. Participant in Medical Decision Making Short Course - Advanced Topics in Estimation and Use of ROC Curves, Rochester, NY, October 20, 1991.
19. Participant in Medical Decision Making Short Course - "Basic Diagnostic Testing", Research, Triangle, NC, October 24, 1993.

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20. "Basic Diagnostic Testing" presented at SGIM, Washington, D.C., April 27, 1994.
21. "Basic Diagnostic Testing" presented at SGIM, San Diego, CA, April 1995.
22. "Shared Participation Model for Outpatient Morning Report", Workshop presented at SGIM National Meeting, April 1995.
23. "Advanced ROC Analysis", Workshop presented at SGIM National Meeting, April 1995.
24. "Advanced ROC Analysis" presented at SGIM, San Diego, CA, May 6, 1995.
25. Interactive Faculty Model of Outpatient Morning Report" presented at SGIM, San Diego, CA, May 6, 1995.
26. Grand Rounds University of Alabama at Birmingham " Shades of Gray: Using the Ordinality of Diagnostic Testing" August 4, 1995.
27. "Basic Diagnostic Testing" presented at AAMC, Washington, D.C., October 30, 1995.
28. Grand Rounds University of Alabama at Birmingham Internists Should Screen for Prostate Cancer: A Debate - January 4, 1996
29. "Internal Medicine Residents' Ambulatory Morning Report", Workshop presented at SGIM in Washington, D.C., May 1996.
30. "Techniques of Decision Analysis", invited lecturer for Universidad Peruana Cayetano Heredia, Lima, Peru, December 9-12, 1996.
31. Grand Rounds University of Alabama at Birmingham We Should Screen Adults for Hypercholesterolemia - A Debate Feb. 20, 1997
32. "Cholesterol Management in the Stroke Belt through Improved Patient Compliance", audioconference faculty for the Continuing Medical Education , University of Alabama at Birmingham. Supported by Merck US Human Health. June 11 – July 11, 1997.
33. "Congestive Heart Failure Case Conferences", lecturer for the Division of Continuing Medical Education, University of Alabama at Birmingham. Supported by the Division of Continuing Medical Education and United Health Care. June 16 – August 11, 1997.
34. "Basic Diagnostic Testing" presented at SMDM, Houston, TX, October 26, 1997.
35. Grand Rounds University of Alabama at Birmingham Resolve: Should We Attempt to Cardiovert Patients with Atrial Fibrillation - A Debate - December 11, 1998
36. "Cost Utility Analysis for Managing Severe Esophagitis" presented in Japan 2/11/98-2/16/98.
37. "Innovations in Medical Education" Invited Lecturer to the New England Medical Center, Boston

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Massachusetts March 6, 1998.

38. "Developing Cost-Effective Optical Diagnostic Methods Workshop (Evaluating Clinical Test Performance)" Spring Topical Meeting Sponsored by the Optical Society of America presented in Orlando, March 7, 1998.
39. Klapow J, Skrinar A, Heudebert G, Centor R. Management of GERD: An empirical validation of cost-effectiveness model assumptions. Presented at the Nineteenth Annual Scientific Sessions of the Society of Behavioral Medicine, 1998. New Orleans, LA.
40. Centor RM, Heudebert GR. Medical Grand Rounds University of Alabama at Birmingham. "Hospitalist Movement in Internal Medicine - A Debate" December 10, 1998.
41. Michigan State University Lansing Michigan - Preventive Medicine Teaching Workshop. March 9, 1999.
42. Scientific Program "5 Million Failing Hearts: Reaching Patients, Reaching Goals". Presentation: Heart Failure in our Community: What are the Challenges? And a Case Presentation. Sheraton Birmingham Hotel, Birmingham, Alabama June 12, 1999.
43. Centor RM. Medical Grand Rounds University of Alabama at Birmingham. "A Clinical Approach to Metabolic Acidosis". August 19, 1999.
44. Centor RM. Medical Grand Rounds University of Wisconsin, Milwaukee, Wisconsin. May 12, 2000.
45. Centor RM, Heudebert GR. Medical Grand Rounds University of Alabama at Birmingham "Hormone Replacement Therapy for Post-Menopausal Women in the New Millennium" June 7, 2000.
46. Centor, RM. Medical Grand Rounds University of Alabama at Birmingham "24 YO BM with Anemia and Jaundice" January 3, 2001.

Electronic Documentation

1. Centor, Robert. "Clinical Decision Making for Dummies." 1 Sept. 2001. University of Alabama at Birmingham Continuing Medical Education Online Courses.
<http://www-cme.erep.uab.edu/onlineCourses/ClinPredictRules/ID0058.html>
2. Centor, Robert. "Update in Unstable Angina and Non-ST Segment Elevation Myocardial Infarction (NSTEMI) – 2001" 1 Jun. 2001. University of Alabama at Birmingham Continuing Medical Education Online Courses.
<http://www-cme.erep.uab.edu/onlineCourses/NSTEMI/NSTEMI.html>

Computer Programs

ROC Analyzer (version 6.0) - program which takes ordinal data and allows for several analyses: [1] ROC curve plotting for 1-3 curves; [2] ROC area analysis (by either a non-parametric method or by the classic maximum likelihood estimation method); [3] comparing the areas under 2 ROC curves (using the method described by Hanley and McNeil); [4] calculating likelihood ratios and their 95% confidence intervals (for each ordinal category) - Updated, Feb, 1992.

Twobytwo (version 1.0) - program for calculating statistics based on a 2 X 2 table, examples include: sensitivity, specificity, odds ratio, likelihood ratio, chi-square analysis, t-test for small numbers - Updated, Feb, 1992.

VB ROC Analyzer (version 0.98) - a Window's based program which performs ROC analysis. The program can compare up to three curves with either non-parametric or maximum likelihood estimation areas. This beta version also provides for graphic printing and graphic saving - updated April, 1995.