

DAVID E. WENNBERG, MD, MPH

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POSITIONS

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<b>Chief Technology Advisor</b> 2011 – present	<b>The Dartmouth Institute</b>
<b>Consultant</b> 2011 - present	<b>MaineHealth</b>
<b>Chief Science Advisor</b> – 2013	<b>Bupa</b> <b>2011</b>
<b>Chief Science &amp; Products Officer</b> 2002 – 2011	<b>Health Dialog</b>
<b>Director</b> 1993 – 2007	<b>Center for Outcomes Research &amp; Evaluation</b>

EDUCATION

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<b>M.P.H.</b>	Harvard School of Public Health, Boston, Massachusetts	1992
<b>M.D., C.M.</b>	McGill University Faculty of Medicine, Montreal, Quebec	1987
<b>B.A.</b>	Philosophy (Department Honors) Haverford College, Haverford, Pennsylvania	1983

RESIDENCY and FELLOWSHIP

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<b>Fellow</b> 1992	Massachusetts General Hospital, Boston, Massachusetts	1990 –
<b>Resident</b> 1990	Maine Medical Center, Portland, Maine	1988 –
<b>Internship</b> 1988	Maine Medical Center, Portland, Maine	1987 –

ACADEMIC APPOINTMENTS

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<b>Assistant Professor of Medicine</b> present	University of Vermont College of Medicine	1992 –
<b>Adjunct Associate Professor of Medicine</b> 1994 – present	Dartmouth Medical School	

HOSPITAL APPOINTMENTS

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<b>Staff Physician</b> 1992 – present	Maine Medical Center, Portland, Maine
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## NATIONAL COMMITTEE ASSIGNMENTS and CONSULTATIONS

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<b>Healthcare Strategy Initiatives</b> 2007 – present	Healthcare Executives Network	
<b>Leapfrog Initiative</b> 2012	Consultant on Safety	2000 –
<b>Missouri Hospital Assoc</b>	Consultant on Provider Interventions on Quality & Treatment Variation	2000 – 2001
<b>Blue Cross / Blue Shield Michigan</b>	Consultant on Provider Interventions on Quality & Treatment Variation	1999 – 2000
<b>American Heart Association</b>	Cardiovascular Disease & Stroke Quality of Care & Outcomes	1999 – 2000
	Research Acute Ischemic Stroke Working Group	1999 –
	2000	
<b>American Heart Association</b> 2000	PTCA Work Group	1999 –

## REGIONAL and LOCAL COMMITTEES

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<b>Prostate Cancer Guidelines Work Group</b> 2007 – 2011	MaineHealth, Portland, Maine
<b>Member, Board of Directors</b> 2000 – 2010	Maine Medical Center, Portland, Maine
<b>Chairman, Board Performance Improvement Committee</b> 2000 – 2010	Maine Medical Center, Portland, Maine
<b>Long-term Information Planning Committee,</b> 2000 – 2011	MaineHealth, Portland, Maine
<b>Cost, Quality and Accountability Task Force</b> 2000 – 2011	Maine Hospital Association
<b>Quality Improvement and Utilization Management</b> 1999 – 2011	Maine Physician Health Organization, Portland, Maine
<b>Clinical Integration Steering Committee,</b> 2000 – 2003	MaineHealth, Portland, Maine
<b>Ah! Asthma Health for Children Coalition</b> 1998 – 2005	MaineHealth, Portland, Maine
<b>Senior Research Associate</b> 1992 – 2001	Maine Medical Assessment Foundation Manchester, Maine

## JOURNAL REVIEWER

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Journal of the American Medical Association

MEMBERSHIPS in PROFESSIONAL SOCIETIES

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American College of Physicians  
American Society of Internal Medicine  
Academy for Health Services Research & Health Policy  
Society of General Internal Medicine  
Maine Medical Association

ACADEMIC SERVICE RESPONSIBILITIES

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**Programmatic Responsibilities**

Director, Center for Outcomes Research & Evaluation,  
Maine Medical Center, Portland, Maine 1993 – 2007  
*Multi-disciplinary research organization with eight full time employees and five part time  
clinicians.*

**Direct Teaching Responsibilities**

1993 –  
2007  
Mentor for residents and fellows enrolled at the Center for Evaluative Clinical Sciences  
Director of evidence-based journal clubs for Pediatrics, Internal Medicine and OB/GYN  
Mentor and consultant for research projects of residents, fellows and attendings research  
projects

**Administrative**

2010  
Lead Maine Medical Center's data efforts in quality improvement and physician 1993 –  
profiling.

## RESEARCH SUPPORT: Current & Prior Grants and Contracts

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<b>Co-Investigator</b>	New Cardiac Surgery Programs: Patients, Outcomes, Access. NHLBI	2006 – 2008
<b>Co-Investigator</b>	Causes and Consequences of Health Care Intensity. NIA	2001 – present
<b>Principal Investigator</b>	Blue Cross / Blue Shield of Michigan Healthcare Atlas	2000
<b>Co-Investigator</b>	Academic Detailing to Improve Smoking Cessation Efforts. AHRQ	2000 – 2003
<b>Co-Investigator</b>	Impact of Regionalization in Medicare for High Risk Surgery. AHRQ	2000 – 2003
<b>Principal Investigator</b>	Cardiovascular Atlas	1999
<b>Co-Investigator</b>	Is More Actually Better? The Implications of Increasing Capacity in Healthcare.	1997 – 2000
<b>Co-Investigator</b>	Robert Wood Johnson Foundation Study Group Dissemination. AHCPR	1992 – 1997

## BOOKS

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Wennberg JE, **Wennberg DE**, editors. *The Dartmouth Atlas of Healthcare in Michigan*. 2000; AHA Press, Chicago, IL.

**Wennberg DE**, Birkmeyer JD, editors. *The Dartmouth Atlas of Cardiovascular Healthcare*. 1999; AHA Press, Chicago, IL.

Wennberg JE, Cooper M, Birkmeyer J, Bonner K, Bubolz T, Campbell D, Fisher E, O'Connor G, Poage J, Sharpe S, Skinner J, Stukel T, **Wennberg DE**. *The Dartmouth Atlas of Healthcare in the United States*. 1999; AHA Press, Chicago, IL.

## JOURNAL ARTICLES

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1. Colla CH, **Wennberg DE**, Meara E, Skinner JS, Gottlieb D, Lewis VA, Snyder CM, Fisher ES. **Spending differences associated with the Medicare Physician Group Practice Demonstration**. JAMA. 2012 Sep; 308(10):1015-23.
2. Lucas FL, Siewers A, Goodman DC, Wang D, **Wennberg DE**. **New Cardiac Surgery Programs Established from 1993 to 2004 Led to Little Increased Access, Substantial Duplication of Services**. Health Aff. 2011 Aug; 30(8):1569-74.
3. **Wennberg DE**, Malenka DJ. **Commentary on the American Heart Association's Pharmaceutical Roundtable – Spina Outcomes Center Papers**. Circulation. Cardiovascular Quality & Outcomes. 2011 Mar. 4(2):227-8.
4. Matlock DD, Peterson PN, Sirovich BE, Wennberg DE, Gallagher PM, Lucas FL. **Regional Variations in Palliative Care: Do Cardiologists Follow Guidelines?** J Palliative Med. 2010 Nov; 13(11):1315-9.

5. Haskins AE, Siewers AE, Malenka DJ, **Wennberg DE**, Lucas FL. **Characteristics of new cardiac surgery programs in the United States: mitigating the learning curve.** Am Heart J. 2010 May;159(5):919-25.
6. **Wennberg DE**, Marr A, Lang L, O'Malley S, Bennett G. **A randomized trial of a telephone care-management strategy.** N Engl J Med. 2010 Sep 23;363(13):1245-55.
7. Matlock DD, Peterson PN, Sirovich BE, **Wennberg DE**, Gallagher PM, Lucas FL. **Regional variations in palliative care: do cardiologists follow guidelines?** JPalliat Med. 2010 Nov;13(11):1315-9.
8. Lucas FL, Sirovich BE, Gallagher PM, Siewers AE, **Wennberg DE**. **Variation in cardiologists' propensity to test and treat. Is it associated with regional variation in utilization?** Circ Cardiovasc Qual Outcomes. 2010 May;3(3):253-60.
9. Qaseem A, Snow, V, Gosfield, A, Gregg, D, Michl, K, **Wennberg, DE**, Weiss KB, Schneider, EC. **Pay for Performance Through the Lens of Medical Professionalism.** Annals of Internal Med. 2010 Mar 16; 152(6): 366-9.
10. Sirovich B, Gallagher PM, Wennberg DE, Fisher ES. **Discretionary decision making by primary care physicians and the cost of U.S. Health care.** Health Aff. 2008 May-Jun;27(3):813-23.
11. Lucas FL, Siewers AE, DeLorenzo MA, **Wennberg DE**. **Differences in cardiac stress testing by sex and race among Medicare beneficiaries.** Am Heart J. 2007 Sep; 154(3):502-9.
12. Stukel TA, Fisher ES, **Wennberg DE**. **Using observational data to estimate treatment effects.** JAMA. 2007 May 16; 297(19):2078-9.
13. Stukel TA, Fisher ES, **Wennberg DE**, Alter DA, Gottlieb DJ, Vermeulen MJ. **Analysis of observational studies in the presence of treatment selection bias: effects of invasive cardiac management on AMI survival using propensity score and instrumental variable methods.** JAMA. 2007 Jan 17; 297(3):278-85.
14. Cullen MR, Vegso S, Cantley L, Galusha D, Rabinowitz P, Taiwo O, Fiellin M, **Wennberg D**, Iennaco J, Slade MD, Sircar K. **Use of medical insurance claims data for occupational health research.** J Occup Environ Med. 2006 Oct; 48(10):1054-61.
15. Barry MJ, DeLorenzo MA, Walker-Corkery ES, Lucas FL, **Wennberg DE**. **The rising prevalence of androgen deprivation among older American men since the advent of prostate-specific antigen testing: a population-based cohort study.** BJU Int. 2006 Nov;98(5):973-8.
16. Billings J, Dixon J., Mijanovich T, **Wennberg DE**. **Case finding for patients at risk of readmission to hospital: development of algorithm to identify high risk patients.** BMJ. 2006 Aug 12;333(7563):327.
17. Lucas FL, DeLorenzo MA, Siewers AE, **Wennberg DE**. **Temporal trends in the utilization of diagnostic testing and treatments for cardiovascular disease in the United States, 1993-2001.** Circulation. 2006 Jan 24;113(3):374-9.
18. Al-Khatib SM, Lucas FL, Jollis JG, Malenka DJ, **Wennberg DE**. **The relation between patients' outcomes and the volume of cardioverter-defibrillator implantation procedures performed by physicians treating Medicare beneficiaries.** J Am Coll Cardiol. 2005 Oct 18; 46(8):1536-40.
19. Barnato AE, Lucas FL, Staiger D, **Wennberg DE**, Chandra A. **Hospital-level racial disparities in acute myocardial infarction treatment and outcomes.** Med Care. 2005 Apr;43(4):308-19.
20. Stukel TA, Lucas FL, **Wennberg DE**. **Long-term outcomes of regional variations in intensity of invasive vs. medical management of Medicare Patients with acute myocardial infarction.** JAMA. 2005 Mar 16;293(11):1329-37.
21. Clark DE, DeLorenzo MA, Lucas FL, **Wennberg DE**. **Injuries among older Americans with and without Medicare.** Am J Public Health. 2005 Feb; 95(2):273-8.
22. Fitzner K, Sidorov J, Fetterolf D, **Wennberg D**, Eisenberg E, Cousins M, Hoffman J, Haughton J, Charlton W, Krause D, Woolf A, McDonough K, Todd W, Fox K, Plocher D, Juster I, Stiefel M, Villagra V,

- Duncan I; Quality and Research Committee, Disease Management Association of America. **Principles for assessing disease management outcomes.** Dis Manag. 2004 Fall; 7(3):191-201.
23. Clark DE, DeLorenzo MA, Lucas FL, **Wennberg DE.** **Epidemiology and short-term outcomes of injured Medicare patients.** J Am Geriatr Soc. 2004 Dec;52(12):2023-30.
  24. **Wennberg DE,** Lucas FL, Siewers AE, Kellett MA, Malenka DJ. **Outcomes of percutaneous coronary interventions performed at centers without and with onsite coronary artery bypass graft surgery.** JAMA. 2004 Oct 27;292(16):1961-8.
  25. **Wennberg DE,** Wennberg JE. **Addressing variations: is there hope for the future?** Health Aff(Millwood). 2003 Jul-Dec; Suppl Web Exclusives:W3-614-7.
  26. Fisher ES, **Wennberg DE,** Stukel TA, Gottlieb DJ. **Variations in the longitudinal efficiency of academic medical centers.** Health Aff (Millwood). 2007; Suppl Web Exclusives: VAR 19-32.
  27. Fetterolf D, **Wennberg D,** Devries A. **Estimating the return on investment in disease management programs using a pre-post analysis.** Dis Manag. 2004 Spring;7(1):5-23.
  28. Birkmeyer JD, Stukel TA, Siewers AE, Goodney PP, **Wennberg DE,** Lucas FL. **Surgeon volume and operative mortality in the United States.** N Engl J Med. 2003 Nov 27;349(22):2117-27.
  29. Goodney PP, O'Connor GT, **Wennberg DE,** Birkmeyer JD. **Do hospitals with low mortality rates in coronary artery bypass also perform well in valve replacement?** Ann Thorac Surg. 2003 Oct;76(4):1131-6.
  30. Piper WD, Malenka DJ, Ryan TJ Jr, Shubrooks SJ Jr, O'Connor GT, Robb JF, Farrell KL, Corliss MS, Hearne MJ, Kellett MA Jr, Watkins MW, Bradley WA, Hettleman BD, Silver TM, McGrath PD, O'Mears JR, **Wennberg DE;** Northern New England Cardiovascular Disease Study Group. **Predicting vascular complications in percutaneous coronary interventions.** Am Heart J. 2003 Jun;145(6):1022-9.
  31. McClain MR, **Wennberg DE,** Sherwin RW, Steinmann WC, Rice JC. **Trends in the diabetes quality improvement project measures in Maine from 1994 to 1999.** Diabetes Care. 2003 Mar; 26(3):597-601.
  32. Fisher ES, **Wennberg DE,** Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. **The implications of regional variations in Medicare spending. Part 2: health outcomes and satisfaction with care.** Ann Intern Med. 2003 Feb 18;138(4):288-98.
  33. Fisher ES, **Wennberg DE,** Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. **The implications of regional variations in Medicare spending. Part 1: the content, quality, and accessibility of care.** Ann Intern Med. 2003 Feb 18;138(4):273-87. Summary for patients in: Ann Intern Med. 2003 Feb 18;138(4):136.
  34. Malenka DJ, **Wennberg DE,** Quinton HA, O'Rourke DJ, McGrath PD, Shubrooks SJ, O'Connor GT, Ryan TJ, Robb JF, Kellett MA, Bradley WA, Hearne MA, VerLee PN, Watkins MW, Hettleman BD, Piper WD; Northern New England Cardiovascular Disease Study Group. **Gender-related changes in the practice and outcomes of percutaneous coronary interventions in Northern New England from 1994 to 1999.** J Am Coll Cardiol. 2002 Dec 18;40(12):2092-101.
  35. Finlayson EV, Birkmeyer JD, Stukel TA, Siewers AE, Lucas FL, **Wennberg DE.** **Adjusting surgical mortality rates for patient comorbidities: more harm than good?** Surgery. 2002 Nov;132(5):787-94.
  36. Birkmeyer JD, Skinner JS, **Wennberg DE.** **Will volume-based referral strategies reduce costs or just save lives?** Health Aff (Millwood). 2002 Sep-Oct;21(5):234-41.
  37. Goodney PP, Siewers AE, Stukel TA, Lucas FL, **Wennberg DE,** Birkmeyer JD. **Is surgery getting safer? National trends in operative mortality.** J Am Coll Surg. 2002 Aug;195(2):219-27.
  38. Birkmeyer JD, Siewers AE, Finlayson EV, Stukel TA, Lucas FL, Batista I, Welch HG, **Wennberg DE.** **Hospital volume and surgical mortality in the United States.** N Engl J Med. 2002 Apr 11;346(15):1128-37.
  39. Axelrod DA, Fendrick AM, Birkmeyer JD, **Wennberg DE,** Siewers AE. **Cardiologists performing peripheral angioplasties: impact on utilization.** Eff Clin Pract. 2001 Sep-Oct;4(5):191-8.

40. Niles NW, McGrath PD, Malenka D, Quinton H, **Wennberg D**, Shubrooks SJ, Tryzelaar JF, Clough R, Hearne MJ, Hernandez F Jr, Watkins MW, O'Connor GT; Northern New England Cardiovascular Disease Study Group. **Survival of patients with diabetes and multivessel coronary artery disease after surgical or percutaneous coronary revascularization: results of a large regional**
41. **prospective study**. Northern New England Cardiovascular Disease Study Group. J Am Coll Cardiol. 2001 Mar 15;37(4):1008-15.
42. McGrath PD, **Wennberg DE**, Dickens JD Jr, Siewers AE, Lucas FL, Malenka DJ, Kellett MA Jr, Ryan TJ Jr. **Relation between operator and hospital volume and outcomes following percutaneous coronary interventions in the era of the coronary stent**. JAMA. 2000 Dec 27;284(24):3139-44.
43. Shubrooks SJ Jr, Malenka DJ, Piper WD, Bradley WA, Watkins MW, Ryan TJ, Hettleman BD, VerLee PN, O'Meara JR, Robb JF, Kellett MA, Hearne MA, McGrath PD, **Wennberg DE**, O'Rourke DJ, Silver TM. **Safety and efficacy of percutaneous coronary interventions performed immediately after diagnostic catheterization in northern New England and comparison with similar procedures performed later**. Am J Cardiol. 2000 Jul 1;86(1):41-5.
44. Birkmeyer JD, Lucas FL, **Wennberg DE**. **Potential benefits of regionalizing major surgery in Medicare patients**. Eff Clin Pract. 1999 Nov-Dec;2(6):277-83.
45. Laycock WS, Siewers AE, Birkmeyer CM, **Wennberg DE**, Birkmeyer JD. **Variation in the use of laparoscopic cholecystectomy for elderly patients with acute cholecystitis**. Arch Surg. 2000 Apr;135(4):457-62.
46. Malenka DJ, McGrath PD, **Wennberg DE**, Ryan TJ Jr, Kellett MA Jr, Shubrooks SJ Jr, Bradley WA, Hettleman BD, Robb JF, Hearne MJ, Silver TM, Watkins MW, O'Meara JR, VerLee PN, O'Rourke DJ. **The relationship between operator volume and outcomes after percutaneous coronary interventions in high volume hospitals in 1994-1996: the northern New England experience**. Northern New England Cardiovascular Disease Study Group. J Am Coll Cardiol. 1999 Nov 1;34(5):1471-80.
47. Lucas FL, **Wennberg DE**, Malenka DJ. Variation in the use of echocardiography. Eff Clin Pract. 1999 Mar-Apr;2(2):71-5.
48. Finison KS, Wellins CA, Wennberg DE, Lucas FL. **Screening mammography rates by specialty of the usual care physician**. Eff Clin Pract. 1999 May-Jun;2(3):120-5.
49. O'Connor GT, Malenka DJ, Quinton H, Robb JF, Kellett MA Jr, Shubrooks S, Bradley WA, Hearne MJ, Watkins MW, **Wennberg DE**, Hettleman B, O'Rourke DJ, McGrath PD, Ryan T Jr, VerLee P. **Multivariate prediction of in-hospital mortality after percutaneous coronary interventions in 1994-1996. Northern New England Cardiovascular Disease Study Group**. J Am Coll Cardiol. 1999 Sep;34(3):681-91.
50. McGrath PD, Malenka DJ, **Wennberg DE**, Shubrooks SJ Jr, Bradley WA, Robb JF, Kellett MA Jr, Ryan TJ Jr, Hearne MJ, Hettleman B, O'Meara JR, VerLee P, Watkins MW, Piper WD, O'Connor GT. **Changing outcomes in percutaneous coronary interventions: a study of 34,752 procedures in northern New England, 1990 to 1997. Northern New England Cardiovascular Disease Study Group**. J Am Coll Cardiol. 1999 Sep;34(3):674-80.
51. Onion DK, Meyer DL, **Wennberg DE**, Soule DN. **Primary cesarean section rates in uninsured, Medicaid and insured populations of predominantly rural northern New England**. J Rural Health. 1999 Winter;15(1):108-12.
52. **Wennberg DE**, Birkmeyer JD, Lucas FL. **Pounds of prevention for ounces of cure: surgery as a preventive strategy**. Lancet. 1999 Apr;353 Suppl 1:S19-11.
53. **Wennberg DE**, Malenka DJ, Sengupta A, Lucas FL, Vaitkus PT, Quinton H, O'Rourke D, Robb JF, Kellett MA Jr, Shubrooks SJ Jr, Bradley WA, Hearne MJ, Lee PV, O'Connor GT. **Percutaneous transluminal coronary angioplasty in the elderly: epidemiology, clinical risk factors,**

- and in-hospital outcomes. The Northern New England Cardiovascular Disease Study Group.** Am Heart J. 1999 Apr;137(4 Pt 1):639-45.
54. Malenka DJ, O'Rourke D, Miller MA, Hearne MJ, Shubrooks S, Kellett MA Jr, Robb JF, O'Meara JR, VerLee P, Bradley WA, **Wennberg D**, Ryan T Jr, Vaitkus PT, Hettleman B, Watkins MW, McGrath PD, O'Connor GT. **Cause of in-hospital death in 12,232 consecutive patients undergoing percutaneous transluminal coronary angioplasty. The Northern New England Cardiovascular Disease Study Group.** Am Heart J. 1999 Apr;137(4 Pt 1):632-8.
  55. Schneiter EJ, Keller RB, **Wennberg D.** **Physician partnering in Maine: an update from the Maine Medical Assessment Foundation.** Jt Comm J Qual Improv. 1998 Oct;24(10):579-84.
  56. Mayo SW, Eldrup-Jorgensen J, Lucas FL, **Wennberg DE**, Bredenberg CE. **Carotid endarterectomy after NASCET and ACAS: a statewide study. North American Symptomatic Carotid Endarterectomy Trial. Asymptomatic Carotid Artery Stenosis Study.** J Vasc Surg. 1998 Jun;27(6):1017-22; discussion 1022-3.
  57. Gilliam F, **Wennberg DE.** **The use and cost of medical resources: what will we pay for neurologic health?** Neurology. 1998 Jun;50(6):1528-9.
  58. **Wennberg DE.** **Variation in the delivery of health care: the stakes are high.** Ann Intern Med. 1998 May 15;128(10):866-8.
  59. **Wennberg DE**, Lucas FL, Birkmeyer JD, Bredenberg CE, Fisher ES. **Variation in carotid endarterectomy mortality in the Medicare population: trial hospitals, volume, and patient characteristics.** JAMA. 1998 Apr 22-29;279(16):1278-81.
  60. McGrath PD, **Wennberg DE**, Malenka DJ, Kellett MA Jr, Ryan TJ Jr, O'Meara JR, Bradley WA, Hearne MJ, Hettleman B, Robb JF, Shubrooks S, VerLee P, Watkins MW, Lucas FL, O'Connor GT. **Operator volume and outcomes in 12,998 percutaneous coronary interventions. Northern New England Cardiovascular Disease Study Group.** J Am Coll Cardiol. 1998 Mar 1;31(3):570-6.
  61. Skelton AK, Madan MP, Thompson WD, **Wennberg DE.** **Utilization patterns of cord blood gas analysis.** Obstet Gynecol. 1997 Oct;90(4 Pt 1):538-41.
  62. Fraser GL, Stogsdill P, Dickens JD Jr, **Wennberg DE**, Smith RP Jr, Prato BS. **Antibiotic optimization. An evaluation of patient safety and economic outcomes.** Arch Intern Med. 1997 Aug 11-25;157(15):1689-94. Erratum in: Arch Intern Med 1997 Nov 24;157(21):2487.
  63. Keller RB, **Wennberg DE**, Soule DN. **Changing physician behavior: the Maine Medical Assessment Foundation.** Qual Manag Health Care. 1997 Summer;5(4):1-11.
  64. O'Rourke DJ, Malenka DJ, Robb JF, Bradley WA, Kellett MA, Shubrooks S, Hearne M, Verlee P, **Wennberg D**, Vaitkus PT, O'Meara J, Ryan TJ Jr, Hettleman B, Miller M, Quinton H, Sengupta A, O'Connor GT. **Results of directional coronary atherectomy in Northern New England. Northern New England Cardiovascular Disease Study Group.** Am J Cardiol. 1997 Jun 1;79(11):1465-70.
  65. **Wennberg D**, Dickens J Jr, Soule D, Kellett M Jr, Malenka D, Robb J, Ryan T Jr, Bradley W, Vaitkus P, Hearne M, O'Connor G, Hillman R. **The relationship between the supply of cardiac catheterization laboratories, cardiologists and the use of invasive cardiac procedures in northern New England.** J Health Serv Res Policy. 1997 Apr;2(2):75-80.
  66. **Wennberg DE**, Dickens JD Jr, Biener L, Fowler FJ Jr, Soule DN, Keller RB. **Do physicians do what they say? The inclination to test and its association with coronary angiography rates.** J Gen Intern Med. 1997 Mar;12(3):172-6.
  67. Malenka DJ, O'Connor GT, Quinton H, **Wennberg D**, Robb JF, Shubrooks S, Kellett MA Jr, Hearne MJ, Bradley WA, VerLee P. **Differences in outcomes between women and men associated with percutaneous transluminal coronary angioplasty. A regional prospective study of 13,061 procedures. Northern New England Cardiovascular Disease Study Group.** Circulation. 1996 Nov 1;94(9 Suppl):II99-104.



68. Welch HG, **Wennberg DE**, Welch WP. **The use of Medicare home health care services.** N Engl J Med. 1996 Aug 1;335(5):324-9.
69. Fraser GL, **Wennberg DE**, Dickens JD Jr, Lambrew CT. **Changing physician behavior in ordering digoxin assays.** Ann Pharmacother. 1996 May;30(5):449-54.
70. **Wennberg DE**, Kellett MA, Dickens JD, Malenka DJ, Keilson LM, Keller RB. **The association between local diagnostic testing intensity and invasive cardiac procedures.** JAMA. 1996 Apr 17;275(15):1161-4.
71. O'Connor GT, Plume SK, Olmstead EM, Morton JR, Maloney CT, Nugent WC, Hernandez F Jr, Clough R, Leavitt BJ, Coffin LH, Marrin CA, **Wennberg D**, Birkmeyer JD, Charlesworth DC, Malenka DJ, Quinton HB, Kasper JF. **A regional intervention to improve the hospital mortality associated with coronary artery bypass graft surgery. The Northern New England Cardiovascular Disease Study Group.** JAMA. 1996 Mar 20;275(11):841-6.
72. Conway AC, Keller RB, **Wennberg DE**. **Partnering with physicians to achieve quality improvement.** Jt Comm J Qual Improv. 1995 Nov;21(11):619-26.