SPECIAL ARTICLE

The Value of a Family Physician

Kurt C. Stange, MD, PhD; Carlos R. Jaén, MD, PhD; Susan A. Flocke, PhD; William L. Miller, MD, MA; Benjamin F. Crabtree, PhD;, and Stephen J. Zyzanski, PhD
Cleveland, Ohio; Buffalo, New York; Allentown, Pennsylvania; and Omaha, Nebraska

BACKGROUND. Most efforts to improve health care have been made without a full understanding of the value of a primary care approach.

METHODS. This article synthesizes the observations from the Direct Observation of Primary Care (DOPC) study. This multimethod study of 138 family physicians in 84 practices included direct observation of 4454 patient visits were used to describe aspects of family practice that may provide value for patients.

RESULTS. Family physicians provide and coordinate care for a wide variety of patient problems, prioritizing these competing demands on the basis of relationships developed during multiple patient visits over time. They use acute and chronic illness visits as opportunities to integrate care for specific diseases, mental health, and preventive care in ways that are tailored to the specific needs of patients and families. Higher rates of delivery of core attributes of family practice are associated with patient satisfaction and preventive services delivery, and are diminished by forced discontinuity of care.

CONCLUSIONS. Family physicians prioritize and deliver care according to a broad agenda based on patient needs. These needs are understood within ongoing relationships with the patient, family, larger health care system, and community. This integrative approach includes numerous avenues for affecting important patient outcomes that are unlikely to be optimally met by less integrated models of medical care. Expanding the value of family practice will require the development and application of new knowledge of the core structures, processes, and contexts of family practice, and their effects on patient outcomes.

KEY WORDS. Physicians, family; health care delivery; family practice; primary care. *(J Fam Pract 1998; 46:363-368)*

Family physicians prioritize a wide range of options for care, and provide or facilitate that care within an ongoing relationship with the patient, the family, the health care system, and the community. The family practice approach integrates provision of the entire range of health care, including (1) *breadth* of care that is not limited by the patient's age, the organ system of the patient's problem, or the location at which care is provided; (2) *depth* of knowledge of the patient, family, and community over time as a critical context for the provision of care and for choosing the timing and content of care; (3) *bridging* of the boundaries between health and illness, focusing on enhancing the patient's overall functional health status; and 4) *guiding* access to more narrowly focused care when needed. These attributes and others were enumerated by the early founders of the discipline[1-7] based on their experiences of which approaches were successful in general practice. These principles remain sound.

Submitted, revised, March 18, 1998.
From the Department of Family Medicine (K.C.S., S.A.F., S.J.Z.), the Department of Epidemiology & Biostatistics (K.C.S., S.J.Z.), and the Department of Sociology (K.C.S.), Case Western Reserve University; the Ireland Cancer Center at Case Western Reserve University and University Hospitals of Cleveland (K.C.S., S.A.F., S.J.Z.); the Center for Urban Research in Primary Care (CURE PC), State University of New York at Buffalo (C.R.J.); the Department of Family Practice, Lehigh Valley Hospital, Allentown, Pennsylvania (W.L.M.); Department of Family Practice, University of Nebraska, Omaha, Nebraska (B.F.C.). Requests for reprints should be addressed to Kurt C. Stange, MD, PhD, Case Western Reserve University, 10900 Euclid Ave, Cleveland, OH 44106.

THE NEED FOR KNOWLEDGE

The discipline of family practice emerged in response to the continued need of patients for personal physicians[8] to provide patient-centered care by applying the advances in technical medicine brought about by increased specialization. While major advances in narrowly defined technical aspects of medical care have been supported by a large biomedical research infrastructure, integrated patient-centered care has not been supported by a similar surge in the generation of new knowledge.

This lack of support has led to an imbalance in the knowledge base for medical practice. There is a paucity of scientific information on the integrated care of the whole patient in a family and community context, whereas knowledge about narrowly defined aspects of specific diseases abound. To provide a balance in the scientific basis of health care, new knowledge about the core attributes of family practice, and their effect on patient outcomes is needed.

The core structure and processes of family practice may be seen as a series of concentric circles, with the clinician-patient relationship at the center, the practice environment and operations as the encompassing next circle, and the larger community and health care system context

as the largest circle. Increased understanding of the processes and their integration at each level is essential. This kind of understanding is necessary to identify those aspects of care that are unsuccessful and preserve the components of care that can improve patient outcome. Efforts to improve practice should be preceded by efforts to understand practice.[9]

THE HEALTH CARE SYSTEM CONTEXT

Many of the attributes of family practice are attained to varying degrees in the training[10] and practice[11] of the other primary care disciplines. These elements are articulated in the Institute of Medicine's recent definition of primary care:

> Primary care is the provision of *integrated, accessible health care services* by clinicians who are *accountable* for addressing a large *majority of personal health care needs*, developing a *sustained partnership with patients*, and practicing in the *context of family and community.*[12]

Recent changes in the health care system have placed the primary care disciplines in a central role,[13-15] largely because of their cost-effectiveness.[16-18] This growth and central positioning provide an opportunity for the primary care disciplines to influence health care in ways that have not been previously available in the specialty-dominated American health care system.[19,20]

The value of family practice and primary care, however, extends beyond cost-effectiveness. The unawareness of the full value of primary care, and frustration with the forced gatekeeper role,[14,21] has produced a backlash from other specialists, health care insurance purchasers, and some patients who have not developed a trusting relationship with their primary care clinician through shared experiences over time.[22,23] Annual bidding of health care contracts are resulting in forced discontinuity of care.[24-26] As a result, a number of Americans are experiencing health care as a disjointed *commodity* divorced from an integrating, ongoing trusting *relationship* with a generalist clinician. Forced discontinuity of care and other threats to the clinician-patient relationship[27-29]are particularly ominous for the primary care disciplines, for which a patient-centered approach[30] is centrally important to their effectiveness.

There is a widespread feeling that this is a critical time for family practice and all the primary care disciplines.[19,20,31] Because the changes that are currently under way could have a profound effect on the ability of family practice to improve the health of their patients,[20] it is important to critically examine the current state of family practice and its potential for the future.

This article uses the multiple lenses of the DOPC study to begin this process of critical examination. The data compiled from this study of 4454 patient visits to 138 community family physicians[32] allow us to: (1) depict aspects of family practice that may represent unique benefits to patients; (2) highlight five possible avenues for expanding the impact of family practice; and (3) identify areas for research, education, and policy advocacy.

OBSERVATIONS

Recently published articles based on the results from the DOPC study show that family physicians:

- **Care for a wide variety of medical problems.** An extensive variety of frequently occurring, rare, and often undifferentiated patient illnesses and problems are treated by family physicians, and procedures are performed as dictated by the needs of the patient.[32]
- **Coordinate care.** During 10% of office visits, family physicians refer patients to other health care professionals for additional care.[32]
- **Prioritize from among a broad agenda** of competing opportunities[33] to meet patient needs.[32]
- **Practice patient-centered medicine.** Family physicians report that their highest priority is taking care of a broad array of patient needs.[32]
- **Provide care within the context of family.** Seventy percent of patients have family members seeing the same family physician.[34] During 18% of office visits, care is provided for a family member other than the identified patient.[35]
- **Develop relationships** over time and multiple patient visits. Patients in this sample had been with their family physician for more than 5 years on average and saw the physician an average of 4 times during the previous year.[32]
- **Perform a high degree of patient education.** Ninety percent of patient visits and 19% of observed time intervals during office visits involved patient education or health habits advice.[32]
- **Tailor health habits messages** toward high-risk patients and teachable moments. Family physicians are more likely to advise patients to quit smoking when they come in for smoking-related illnesses, or when they have other risk factors for tobacco-related diseases,[36]and tailor delivery of a wide range of other preventive services to patient needs.[37] A related study shows that generalist physicians provide smoking counseling at higher rates than other specialists, except for cardiologists, who see a population of patients who are preselected for their need for this advice.[38]
- **Use illness visits as opportunities for prevention.** During 32% of patient visits for illness, family physicians deliver at least one preventive service recommended by the US Preventive Services Task Force.[39]
- **Use patient visits as opportunities to identify mental health problems.** One quarter of adult patients report recent emotional distress. During 18% of visits by these patients, family physicians diagnose depression or anxiety, and provide counseling during the majority of these visits.[40]

• **Maintain a consistent distribution of time use** with patients whether practicing at high or low volume.[41] This implies that there is a core set of behaviors that characterize the family practice outpatient visit.[32]

• **Integrate teaching of medical students** in an outpatient setting in a way that maintains patient satisfaction.[42]

• **Show high levels of fundamental attributes** of interpersonal communication, accumulated knowledge of the patient, coordination of care, first-contact care, and continuity of care. The delivery of these attributes is associated with patient satisfaction,[43]and with the delivery of different classes of preventive services.[44]

OPPORTUNITIES FOR EXPANDING THE IMPACT OF FAMILY PRACTICE

The observations made from the DOPC results show some of the current value of family practice. Some of the potential of family practice, however, is currently unfulfilled. There are many opportunities to enhance the effectiveness of practice, and many avenues for policy, education, and research advances.

Opportunities to Enhance the Effectiveness of Family Practice

• **Increase the emphasis on family practice as the focal point for the application of new technologies and evidence-based approaches to improving patient outcomes.** The optimal application of emerging technologies, such as genetic screening,[45,46] requires understanding patient values, competing health and personal priorities, and a family context.[47-50] In addition, the application of evidence-based approaches to care[21] and the use of specialized services[15] can only be achieved within the context of a trusting relationship that is developed over time. Therefore, the development and application of new technologies should be integrated with family practice. These technologies and evidence-based approaches should not be developed in isolation, and then viewed as a problem of dissemination when their application fails.[51,52]

• **Bolster the family physician's ability to carry out technically excellent chronic disease management within the context of each patient's competing needs.** The quality improvement goals of disease management initiatives,[53-55] which are often narrowly disease-focused, may be best met within the context of a patient's ongoing relationship with a generalist clinician,[56-58] with selective[3] shared-care involvement of other specialists, or with a multidisciplinary team.[14] The effectiveness of family physicians in disease management may be advanced by the development of information systems that help with the fundamental task of prioritizing competing opportunities for provision of care beyond the bounds of a single disease.

• **Increase the ability to respond to mental health issues.** Family practices have multiple opportunities to influence mental health over time and within the context of an ongoing relationship with patients.[59] The use of illness visits and relationships developed over time to identify and monitor psychosocial issues fosters an integrated approach to mental and physical health. The diagnosis and treatment of mental health problems, however, takes extra time and alters the outpatient visit in fundamental ways.[40] Increasing the already substantial role of family physicians in mental health care may require changes in practice and reorganization of health care systems that increasingly carve out payment for, and provision of, mental health services.

• **Develop systems to enhance clinical preventive services delivery.** Reports based on the use of direct observation document low levels of preventive services delivery.[44] Office system approaches,[60] particularly if they are based on understanding the unique attributes of each practice,[61-63] have great potential to enhance preventive services delivery while maintaining other important attributes of practice. Office systems approaches are enhanced if other family practice team members, such as nurses, take an active role in preventive services delivery.[64,65]

• **Increase the population focus of family practice.** Managed care presents an opportunity for family physicians to apply a population perspective to the care of their panel of patients.[63] Yet, there is a low-level of community focus in current family practices.[32] Changes in medical education,[66] practical approaches to gathering and using community data,[67] and sharing of managed care organizations' data[68]could increase the ability of family physicians to practice community-oriented primary care.[60-71]

Policy, Education, and Research Actions

To maintain and enhance the current value of family practice and to achieve its full potential, action is required in the following areas:

• **Address the challenges to the core values of family practice.** The pressures to increase patient volume[41] and a reduction[72] in autonomy are affecting family practice. An approach that emphasizes the complex adaptive nature of family practice is most likely to turn these challenges into opportunities.[62] Practices that are able to function as "learning organizations"[73]can rapidly adapt to environmental changes in ways that enhance their ability to perform core functions.[74]

• **Family physicians must remain committed** to the fundamental tenets of providing high-quality general health care, and access to specialized care when needed,[15] within a personal and family context.[12]

• **Initiatives designed to enhance the quality of care**[75,76] should consider the potential benefit of a broad patient-focused approach to patients. Increased use of evidence-based, disease-specific guidelines[77,78] may help to optimize the technical aspects of care.[79] However, the ability of a primary care clinician to choose the most important things to focus on, within the context of a longitudinal

relationship with a patient, may account for the quality of patient outcomes in primary care,[17] despite lower resource utilization[16] and, at times, poorer scores on narrowly focused disease-specific management criteria.[80-82] The types of patients and situations that require specialty care[83-85] and the optimal approaches to referral are still being defined.[53, 86]

- **Training programs should produce** primary care clinicians with whom patients would like to develop relationships.[10,30,87]
- **The essential attributes of an ongoing relationship** between patients, families, and a family physician must be defined and articulated, and the ways of measuring these attributes must be refined.[11,43,88-90] The Components of Primary Care Instrument[43] and its subsequent refinement[91] are an important first step in this regard.
- **Family practice and primary care researchers** must rigorously assess the effect of the core attributes on outcomes that matter to patients.[25,26,43,92,93] In this effort, we must develop the methods for studying "the essence that could be captured by truly looking at what family physicians do."[94] This will require the courage to challenge long-held notions[95] as well as advocating for their value based on emerging evidence.
- **Efforts to enhance the scientific knowledge base** of family practice should emphasize practice-based research from a family practice perspective. The DOPC study and a growing body of work[96] show the importance of research from a family practice perspective in a family practice setting.
- **Basic science and applied family practice research** must be developed and given a high priority. This includes opportunities for true peer review and dedicated funding.[12,97,98]
- **Health care systems and purchasers** must work to provide access to primary care clinicians in ways that allow relationships to develop over time. The value of a family physician is currently at risk because our current health care system is forcing discontinuity in the relationship between patients and their family physician.[25] This discontinuity has negative consequences for patients.[25,26,29] Developing alternatives to annual bidding of closed-panel health care plans and altering incentives against family physician-patient continuity may help.

CONCLUSIONS

Family physicians and other advocates for high-quality medical care must take the initiative to identify and support the unique attributes of family practice that affect patient outcomes. At the same time, it is important to critically examine any opportunities to improve the quality of family practice by identifying, measuring, and assessing the effect of different aspects of the family practice approach on patient outcomes. To have an effective health care system, the tremendous biomedical advances that have been fostered by a reductionistic approach must be balanced by, and integrated with, similar advances in a generalist approach. Excellence in narrowly defined technical aspects of care and excellence in patient-centered family practice approaches to care are not antithetical, but they require integration for the provision of optimal health care. This synthesis will require an expansion of the scientific understandings of the core structures and processes of family practice, increased integration of advances in technical aspects of care into the family practice environment, and a greater union of primary and specialty care.

The primary care disciplines have much in common. Many of the unique attributes of family practice documented in the DOPC study may apply to primary care clinicians in other disciplines. In policy arenas, a unified effort that recognizes substantial commonalties and allows for differences will be required if a generalist perspective is to be integrated into the established health care research, financing, and delivery systems that favor specialization.

Many of the problems of the current health care system are a result of the system's failure to provide the fundamental aspects of primary care.[11,99] It will take considerable time and effort to reverse the results of decades of the neglect and de-emphasis of primary care. The recent trend toward valuing primary care largely for its potential cost-savings may also have severe detrimental consequences if it impedes the development of trusting relationships between patients and clinicians.[21]

Family practice has tremendous value. This value has always been recognized by the patients who have experienced it.[26] The opportunity for research and advocacy must be aggressively pursued now, while there are still patients who have experienced the value of an ongoing relationship with a family physician or other primary care clinician. We must work to understand and enhance the true nature of that value and to provide access to it for all patients.

ACKNOWLEDGMENTS

This research was supported by grants from the National Cancer Institute (1RO1 CA 60862 and 2RO1 CA 60862), and by Robert Wood Johnson Generalist Physician Faculty Scholar Awards to Dr Stange and Dr Jaén.

The authors are grateful to the physician members of the Research Association of Practicing Physicians (RAPP) and to the office staffs and patients without whose participation this study would not have been possible.

Paul James, MD, Robert Williams, MD, MPH, Meredith Goodwin, MS, Stephen Zyzanski, PhD, Sim Galazka, MD, C. Kent Smith, MD, and Robin Haynes contributed valuable suggestions to earlier drafts of this manuscript.

REFERENCES

1. Millis JS (Chairman), Citizens Commission on Graduate Medical Education. The graduate education of physicians. Chicago, Ill: American Medical Association, 1966.
2. Geyman JP. The modern family doctor and changing medical practice. New York, NY: Meredith Corporation, 1971.
3. Noble J, ed. Primary care and the practice of medicine. Boston, Mass: Little Brown and Company, Inc, 1976.
4. Medalie JH, ed. Family medicine. Principles and applications.

Baltimore, Md: Williams & Wilkins, 1978.
5. Huygen FJA. Family medicine. The medical life history of families. Nijmegen, The Netherlands: Dekker & VandeVegt, 1978.
6. Stephens GG. The intellectual basis of family practice. Tucson, Ariz: Winter Publishing Company, Inc, 1982.
7. McWhinney IR. A textbook of family medicine. New York, NY: Oxford University Press, 1997.
8. Harlow AH, ed. The future of the personal physician. New York, NY: Group Health Insurance, Inc, 1964.
9. Stange KC. One size doesn't fit all. Multimethod research yields new insights into interventions to increase prevention in family practice. J Fam Pract 1996; 43:358-60.
10. Rivo ML, Saultz JW, Wartman SA, et al. Defining the generalist physician's training. JAMA. 1994; 271:1499-504.
11. Starfield B. Primary care. Concept, evaluation, and policy. New York, NY: Oxford University Press, 1992.
12. Donaldson MS, Yordy KD, Lohr KN, Vanselow NA, eds. Primary care: America's health in a new era. Washington, DC: National Academy Press, 1996.
13. Schulz R, Scheckler WE, Moberg P, Johnson PR. Changing nature of physician satisfaction with health maintenance organization and fee-for-service practices. J Fam Pract 1997; 45:321-30.
14. Dean VC. Physician satisfaction reflects changes in health care landscape. J Fam Pract 1997; 45:319-20.
15. Franks P, Clancy CM, Nutting PA. Gatekeeping revisited—protecting patients from overtreatment. N Engl J Med 1992; 327:424-9.
16. Greenfield S, Nelson EC, Zubkoff M, et al. Variations in resource utilization among medical specialties and systems of care: results from the Medical Outcomes Study. JAMA 1992; 267:1624-30.
17. Greenfield S, Rogers W, Mangotich M, et al. Outcomes of patients with hypertension and non-insulin-dependent diabetes mellitus treated by different systems and specialities: results from the Medical Outcomes Study. JAMA 1995; 274:1436-44.
18. Rosenblatt RA. Specialists or generalists. On whom should we base the American health care system? JAMA 1992; 267:1665-6.
19. Jones JJ. The changing role of the family physician—nirvana or Waterloo? Third annual Nicholas J. Pisacano, MD, memorial lecture. J Am Board Fam Pract 1996; 9:442-7.
20. Geyman JP, Hart LG. Family practice and the health care system. Primary care at a crossroads: progress, problems, and future projections. J Am Board Fam Pract 1994; 7:60-70.
21. Baird MA. Physician-patient-family trust: the bridge to reach evidence-based medicine. Fam Med 1996; 28:682-3.
22. Bodenheimer T. The HMO backlash—righteous or reactionary? N Engl J Med 1996; 335:1601-4.
23. Millenson ML. Demanding medical excellence. Doctors and accountability in the information age. Chicago, Ill: The University of Chicago Press, 1997.
24. Davis K, Collins KS, Schoen C, Morris C. Choice matters: enrollees' views of their health plans. Health Aff (Millwood). 1995; Summer:100-12.
25. Flocke SA, Stange KC, Zyzanski SJ. The impact of insurance type and forced discontinuity on the delivery of primary care. J Fam Pract 1997; 45:129-35.
26. Kahana E, Stange K, Meehan R, Raff L. Forced disruption in continuity of primary care: the patients' perspective. Sociol Focus 1997; 30:177-86.
27. Emanuel EJ, Brett AS. Managed competition and the patient-physician relationship. JAMA. 1995; 273:323-9.
28. Emanuel EJ, Dubler NN. Preserving the physician-patient relationship in the era of managed care. N Engl J Med 1993; 329:879-82.
29. Orentlicher D. Health care reform and the patient-physician relationship. Health Matrix 1995; 5:141-80.
30. Stewart M, Brown JB, Weston WW, McWhinney IR, McWilliam CL, Freeman TR. Patient-centered medicine. Transforming the clinical method. Thousand Oaks, Calif: Sage Publications 1995.
31. Green LA. Science and the future of primary care. J Fam Pract 1996; 42:119-22.
32. Stange KC, Zyzanski SJ, Flocke SA, et al. Illuminating the 'black box': a description of 4454 patient visits to 138 family physicians. J Fam Pract 1998; 46:377-89.
33. Jaén CR, Stange KC, Nutting P. The competing demands of primary care: A model for the delivery of clinical preventive service. J Fam Pract 1994; 38:166-71.
34. Medalie JH, Zyzanski SJ, Langa DM, Stange KC. The family in family practice: Is it a reality? J Fam Pract 1998; 46:390-6.
35. Flocke SA, Goodwin MA, Stange KC. The effect of a secondary patient on the family practice visit. J Fam Pract 1998; 46:429-34.
36. Jaén CR, Crabtree BF, Zyzanski SJ, Stange KC. Making time for tobacco cessation counseling. J Fam Pract 1998; 46:425-8.
37. Flocke SA, Goodwin MA, Stange, KC. Predictors of opportunistic preventive service delivery. J Fam Pract 1998. In press.
38. Jaén CR, Stange KC, Tumiel LM, Nutting P. Missed opportunities for prevention: smoking cessation counseling and the competing demands of practice. J Fam Pract. 1997; 45:348-354.
39. Stange KC, Flocke SA, Goodwin MA. Opportunistic preventive service delivery: are time and patient satisfaction barriers? 1998; 46:419-24.
40. Callahan EJ, Jaén CR, Goodwin MA, Crabtree BF, Stange KC. The impact of recent emotional distress and diagnosis of depression or anxiety on the physician-patient encounter in family practice. J Fam Pract 1998; 46:410-18.
41. Zyzanski SJ, Langa DM, Flocke SA, Stange KC. Trade-offs in high volume primary care practice. J Fam Pract 1998; 46:397-402.
42. Frank SH, Stange KC, Langa DM, Workings M. Direct observation of community-based ambulatory encounters involving medical students. JAMA 1997; 278:712-6.
43. Flocke SA. Measuring attributes of primary care: development of a new instrument. J Fam Pract 1997; 45:64-74.
44. Flocke SA, Stange KC, Zyzanski SJ. The association of attributes of primary care with preventive service delivery. Med Care 1998. In press.
45. American Society of Clinical Oncology. Statement of the American Society of Clinical Oncology: genetic testing for cancer susceptibility. J Clin Oncol 1996; 14: 1730-6.
46. Garber JE, Schrag D. Testing for inherited cancer susceptibility. JAMA 1996; 275: 1928-9.
47. Johnson N, Lancaster T, Fuller A, Hodgson SV. The prevalence of a family history of cancer in general practice. Fam Pract 1995; 12: 287-9.
48. Touchette N, Holtzman NA, Davis JG, Feetham S. Toward the 21st century. Incorporating genetics into primary health care. Plainville, NY: Cold Spring Harbor Laboratory Press, 1997.
49. McCray SV, Allen B, Moseley R, et al. Ethical and practical implications of the human genome initiative for family medicine. Arch Fam Med 1993; 2:1158-63.
50. Doukas DJ. Primary care and the human genome project. Arch Fam Med 1993; 2:1179-83.
51. Kamerow DB. Before and after guidelines. J Fam Pract 1997; 44:344-6.
52. Nutting PA. Why can't clinical policies be relevant to practice? J Fam Pract 1997; 44:350-2.
53. Leichter SB. Traditional versus corporate influence on diabetes care in managed health organizations: risks and opportunities. Clin Diabetes 1998; 16:46-8.
54. Liang MH, Shadick N. Feasibility and utility of adding disease-specific outcome measures to administrative database to improve disease management. Ann Intern Med 1997; 127:739-42.

55. Wagner EH, Austin BT, VonKorff M. Organizing care for patients with chronic illness. Milbank Q 1996; 74:511-44.
56. Spalding J. Disease state management: danger and opportunity. Fam Pract Manage 1996; 3:71-80.
57. Spalding J. Taking the lead in disease state management. Fam Pract Manage 1996; 3:50-7.
58. Scherger JE. Does the personal physician continue in managed care? J Am Board Fam Pract 1996; 9:67-8.
59. Frank deGruy III, MD, MSFM. Mental health care in the primary care setting. In: Donaldson MS, Yordy KD, Lohr KN, Vanselow NA (eds). Primary care: America's health in a new era, Washington, DC: National Academy Press, 1996.
60. Carney PA, Dietrich AJ, Keller A, Landgraf J, O'Connor GT. Tools, teamwork, and tenacity: an office system for cancer prevention. J Fam Pract 1992; 35:388-94.
61. Crabtree BF, Miller WL, Aita V, Flocke SA, Stange KC. Primary care practice organization: a qualitative analysis. J Fam Pract 1998; 46:403-9.
62. Miller WL, Crabtree BF, McDaniel RA, Stange KC. Understanding primary care practice: a complexity model of change. J Fam Pract 1998; 46:369-76.
63. Stange KC. Engaging providers and patients in prevention program design, implementation and operation. In Heiser N, Aizer A, St. Peter R, eds. Promoting the use of clinical preventive services by women in managed care organizations. Washington, DC: Mathematica Policy Research, Inc, 1997.
64. Duncan C, Stein MJ, Cummings SR. Staff involvement and special follow-up time increase physicians' counseling about smoking cessation: a controlled trial. Am J Public Health 1991: 81:899-901.
65. Cargill VA, Conti M, Neuhauser D, McClish D. Improving the effectiveness of screening for colorectal cancer by involving nurse clinicians. Med Care 1991; 29:1-5
66. Greenlick MR. Educating physicians for population-based clinical practice. JAMA 1992; 267:1645-8.
67. Mettee TM, Martin KB, Williams RL. Tools for community-oriented primary care: a process for linking practice and community data. J Am Board Fam Pract 1998; 11:28-33.
68. Thompson RS, Taplin SH, McAfee TA, Mandelson MT, Smith AE. Primary and secondary prevention services in clinical practice. Twenty years' experience in development, implementation and evaluation. JAMA 1995; 273:1130-35.
69. Metee TM, Martin KB, Williams RL. Tools for community-oriented primary care: a process for linking practice and community data. J Am Board Fam Pract 1998; 11:28-33.
70. Nutting PA, ed. Community-oriented primary care: from principle to practice. HRSA Publication No. HRS-A-PE 86-1. Washington, DC: US Department of Health and Human Services, 1987.
71. Institute of Medicine. Community-oriented primary care: a practical assessment, vol. 1. The committee report. Washington, DC: National Academy Press, 1984.
72. Kikano GE, Goodwin MA, Stange KC. Physician employment status and patterns of care. J Fam Pract 1998. In press.
73. Senge PM. The fifth discipline. The art & practice of the learning organization. New York, NY: Doubleday, 1990.
74. Stacey RD. Complexity and creativity in organizations. San Francisco, Calif: Berrett-Koehler Publishers, 1996.
75. Blumenthal D. Quality of health care. Part 1: quality of care—what is it? N Engl J Med 1996; 335:891-4.
76. Blumenthal D. Quality of health care. Part 4: the origins of the quality of care debate. N Engl J Med 1996; 335:1146-9.
77. Geyman JP. Evidence-based medicine in primary care: an overview. J Am Board Fam Pract 1998; 11:46-56.
78. Nutting PA. Why can't clinical policies be relevant to practice? J Fam Pract 1997; 44:350-2.
79. Lohr KN, Yordy KD, Their SO. Current issues in quality of care. Health Affairs 1998; 7:5-18.
80. Edep ME, Shah NB, Tateo IM, Massie BM. Differences between primary care physicians and cardiologists in management of congestive heart failure: relation to practice guidelines. J Am Coll Cardiol 1997; 30:518-26.
81. James PA, Cowan TM, Graham RP, Majeroni BA, Fox CH, Jaén CR. Using a clinical practice guideline to measure physician practice: translating a guideline for the mangement of heart failure. J Am Board Fam Pract 1997; 10:206-12.
82. Sugarman JR. Challenges in measuring adherence to clinical practice guidelines. J Am Board Fam Pract 1997; 10:237-9.
83. Committee of the American College of Rheumatology Council on Health Care Research. Role of specialty care for chronic diseases: a report from an ad hoc committee of the American College of Rheumatology. Mayo Clin Proc 1996; 71:1179-81.
84. Jollis JG, DeLong ER, Peterson ED, et al. Outcome of acute myocardial infarction according to the specialty of the admitting physician. N Engl J Med 1996; 335:1880-7.
85. Goldman L. The value of cardiology. N Engl J Med 1996; 335:1918-9.
86. Lanier DC, Clancy CM. The changing interface of primary and specialty care. J Fam Pract 1996; 42:303-5.
87. Tresolini CP, the Pew-Fetzer Task Force. Health professions education and relationship-centered care. San Francisco, Calif: Pew Health Professions Commission, 1994.
88. Bindman AB, Grumbach K, Osmond D, Vranizan K, Stewart AL. Primary care and receipt of preventive services. J Gen Intern Med 1996; 11:269-76.
89. Safran DG, Tarlov AR, Rogers WH. Primary care performance in fee-for-service and prepaid health care systems. Results from the Medical Outcomes Study. JAMA 1994; 271:1570-86.
90. Stange KC, Zyzanski SJ, Smith TF, et al. How valid are medical records and patient questionnaires for physician profiling and health services research? A comparison with direct observation of patient visits. Med Care 1998. In press.
91. Flocke SA. Primary care instrument [letter]. J Fam Pract 1998; 46:12.
92. Greenfield S. Outcome measurement issues. In Mayfield J, Grady ML, eds. Primary care research: an agenda for the 90's. Rockville, Md: Agency for Health Care Policy and Research, 1990.
93. Green LA. How can family practice and primary care practice-based research networks contribute to medical effectiveness research? In: Hibbard H, Nutting PA, Grady ML (eds). Primary care research: theory and methods. Rockville, Md: Agency for Health Care Policy and Research, 1991.
94. Holloway RL. Between research and practice in family medicine: the gulf resolution. J Fam Pract 1997; 44:543-4.
95. Budetti PP. The legislative perspective on primary care research. In: Mayfield J, Grady ML, eds. Primary care research: an agenda for the 90's. Rockville, Md: Agency for Health Care Policy and Research, 1990.
96. Nutting PA, Green LA. Practice-based research networks: reuniting practice and research around the problems most of the people have most of the time. J Fam Pract 1994; 38:335-6.
97. Stange KC. Primary care research: barriers and opportunities. J Fam Pract 1996; 42:192-8.
98. Culpepper L. Family medicine research. In: Mayfield J, Grady ML, eds. Primary care research: an agenda for the 90's. Rockville, Md: Agency for Health Care Policy and Research, 1990.
99. Starfield B. Primary care and health. A cross-national comparison. JAMA 1991; 266:2268-71.