

Improving and Maintaining Preventive Services, Part 2: Practical Principles for Primary Care

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Recent research has recognized several themes that have been common to many successful projects for increasing cancer screening and other prevention activities. The most common of these themes have been condensed into "principles for implementation," in-

tended to help physicians and other health care providers to improve the provision of preventive medical care within their practices.

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In 1974, *The Lancet* published a landmark series of 19 articles on screening for disease.¹ Since then, physicians have been presented with authoritative preventive recommendations from several major organizations^{2,3} and consensus groups.^{4,5} In addition, there is increasing evidence that preventive recommendations will be given greater emphasis as new formulas for reimbursement are developed.^{6,7} Clearly, physicians have a growing body of credible information and incentives relevant to the provision of preventive services.

In the past decade, most of the barriers that inhibit the adoption of preventive services have been documented.⁸⁻¹⁶ Methods to overcome many of these barriers have also been reported¹⁷⁻²⁵ but seldom have these methods been summarized in a concise format for use by practicing physicians.

The recent literature on the implementation of preventive services reveals several common and generally accepted concepts. For example, the benefits of office reminder systems have been firmly established through many studies.¹⁹⁻²⁴ Similarly, the importance of counseling skills, particularly in regard to smoking cessation, are well documented^{17,18} and have recently been reemphasized by the National Cancer Institute and others.^{25,26} To build on these studies and other recent reviews,^{27,28} we summarized a number of these recurring concepts into practical principles. This format will allow physicians to

review the more salient conclusions from a large body of recent primary care research (Table 1).

Each of the principles has been derived from the attributes of successful programs to improve the provision of preventive services in primary care practices. Some have been substantiated by randomized trials or have a solid basis in behavior and organizational theory. Others represent the opinions of leading researchers in the field of implementing preventive services. In short, there is good evidence that these principles, if conscientiously applied in appropriate situations, can enhance the performance of preventive activity by primary care physicians in a variety of practice settings.

The Principles

Identify baseline performance rates. "... simply put, one cannot begin to deal with an unidentified problem."²⁹

An accurate description of the current state of activity is fundamental for most managerial decisions,^{30,31} including the decision to improve preventive services.²⁹ Baseline levels of performance identify problem areas and help set realistic goals. Progress in achieving these goals is tracked by comparisons to these baseline levels. Accurate baseline levels of performance also serve as reality checks, distinguishing actual performance from estimated performance, which is often overly optimistic.^{19,32}

Example: A primary care physician estimated that 90% to 95% of her adult women patients had received a Papanicolaou test within the previous year or two. After a review of 100 randomly selected charts, the physician was surprised to learn that only 50% of the women over the age of 50 years had been screened in the previous 2 years. Of the remaining

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Table 1. Principles for Implementing Preventive Services in Primary Care Practices

1. Identify baseline performance rates for preventive activities.
2. Set reasonable goals that can be measured, and periodically review progress.
3. Develop a comprehensive plan to achieve and maintain goals.
4. Give high priority to staff training and participation.
5. Be sure office systems, organization, and design facilitate preventive care.
6. Use every opportunity to perform preventive services.
7. Use reminder systems to ensure that patients at risk are identified, screened, and followed.
8. Consider CME with emphasis on skills that can be applied in clinical practice.
9. Develop state-of-the-art counseling and communication skills.
10. Keep cost issues in perspective, and minimize economic barriers for patients.

women, some of whom were seen infrequently, a large proportion had no documented Papanicolaou test in the first place.

Example: An internist reported that he advised all of his patients who smoked to quit. A chart review revealed, however, that no mention of the "current" smoking status of the majority of the patients had been documented, although blood pressure, weight, and pulse had been dutifully recorded. Patient encounters during which advice to quit smoking had been given were rarely recorded except in conjunction with a patient's initial comprehensive history and physical, or following serious acute illnesses.

Set reasonable and measurable goals for preventive activity and periodically review progress. "If you don't know where you're going, any road will take you."³³

Once baseline levels of preventive services are known, goals can be developed. Realistic goals are those that are compatible with practice philosophy, scientifically valid, and within the capacity of a practice to achieve, and for which progress toward accomplishment can be measured.²⁹⁻³¹ Fulfilling these criteria may result in goals that seem modest. However, even modest improvements can make a significant impact on the health of a practice population if the improvements are maintained over time.²⁵

Example: An internist performs a self-audit of his charts and a review of his referral log and finds that only 30% of the women over the age of 50 years have had a recent mammogram, and that an average of only five patients per month are referred for the procedure. Based upon this baseline infor-

mation, he decides that a reasonable goal would be to annually screen 60% of the women age 50 years and older. Increasing the referral average from 5 to 10 referrals per month would accomplish this goal; one that is realistic and easily measurable.

Example: Recording a patient's current smoking status takes less than 5 seconds and can be done at the same time that all vital signs are being measured. A reasonable goal for improving smoking cessation efforts would be to have office staff record the current smoking status of each patient along with patient vital signs. Achievement of this goal could easily be measured by repeat chart audits.

Provisions for periodic review of progress toward accomplishing goals is an important part of the planning process. If progress toward goals is not measured and reviewed, unanticipated problems may not be identified and corrected before old habits return or inefficient patterns become established.

Develop a comprehensive plan to achieve and maintain practice goals. "A nearly magical enhancement of a manager's personal capability can be achieved nine times out of ten by an intelligent emphasis on planning."³⁰

Practice habits are developed over months and years, with physicians and staff gradually settling into patterns that resist change. Consequently, well-intentioned but inadequately planned efforts may initially increase preventive activity; however, a gradual return to baseline levels of performance often occurs.¹⁴⁻¹⁶ True planning is a formal, time-consuming, and sequential process that can be applied to almost any organization or goal.^{30,31}

Example: After attending an informative weekend CME meeting on breast cancer imaging and staging, a busy family practice physician resolved to increase his referrals for mammography. For the first 2 weeks, referrals increased an average of 150% over baseline levels. One month later referrals were 75% above baseline, and the physician resolved to try harder. Two months later, referrals were back to baseline levels. Concerned about this lack of progress, the physician scheduled a series of meetings with his office staff to develop a formal plan for increasing and sustaining the percentage of his female patients referred for mammography and other preventive services.

In planning preventive services, thorough attention to small details yields optimal results. Clearly defined goals, written job descriptions for the staff, and written protocols for referral, follow-up, and recall are just a few of the details that will help the busy physician mentioned above.

Give a high priority to staff training and participation. "... nurses represent a readily available and valuable ally to the physician interested in providing more educational and preventive services."³⁴

By nature, preventive services must be repeated. Patients need to be recalled and examined periodically. This process is most effective when protocols have been established and responsibilities have been delegated to office staff.

Example: A busy primary care physician appointed her office manager as the office smoking cessation coordinator, and together they attended a smoking cessation training session. Within a few days, the manager had used material from the training session to create a "smoke-free" office. She also trained the office staff to identify patients who smoked and to place reminder stickers prominently on the charts of those patients. The entire office staff soon recognized and supported smoking cessation as an integral part of the physician's practice.

The participation of office staff is crucial to the success of any plan to change existing practice patterns.²⁹⁻³¹ The subtle resistance of those excluded from the decision-making process can frustrate even the best efforts to change practice patterns.³⁰

Be sure that office systems, design, and organization facilitate preventive care. "Traditionally, clinical environments, designed on principles of efficiency, have neglected their therapeutic potential."³⁵

Improvements in practice performance are difficult to maintain unless the improvements are institutionalized into organizational systems and patterns of behavior.^{14-16,28} Physicians wishing to improve preventive activity within their practices might consider modifying many of the components of these organizational patterns to facilitate preventive care. These physician-modifiable components include such diverse matters as office design, personnel policy, job descriptions, procedure protocols, business and patient care systems, and protocols for follow-up and referral.²⁸ Critical path analysis, which in this case is the path of a patient through a physician's office (described in Part 1 of this paper), can be used to systematically review these components.^{31,36}

Example: An internist noted that her medical assistant carried on an active dialogue with patients as their vital signs were taken; however, the conversation was void of any health-related discussion. She encouraged the assistant to maintain her friendly manner but asked that she also update the patient's preventive services status²⁰ while obtaining vital signs. The assistant's job description was also revised to include this responsibility.

Use every opportunity to perform preventive procedures. "The Periodic Health Examination translated into encounters with primary care for whatever reason . . . could prove to be the 'voice royal' to health."¹⁰

Most patients do not schedule periodic examinations during which preventive screening and case finding is commonly provided. Most people, however, regularly see physicians for other reasons. Therefore, integrating preventive activities into a variety of patient encounters is a realistic strategy.^{10,21,24} However, certain organizational steps need to be taken before such a combined encounter to ensure that these additional services are not disruptive to practice routine.

Example: A 70-year-old patient, accompanied by his wife, was being prepared by the medical assistant to have a minor laceration sutured. While determining the injured patient's tetanus immunization status, the assistant asked if he or his wife had ever had a pneumococcal vaccination. Since neither had, the assistant discussed the benefits and risks of the vaccination. As a result, both of the patients decided to have the immunization during that visit.

Use reminder systems to ensure that patients at risk are identified, screened, and followed. "Other fields have long recognized the frailty of the human mind and provide memory aids (for example, the pilot's preflight checklist). If physicians are serious about achieving their stated ideals, they should do likewise."²¹

Reminder systems help overcome two of the most important barriers to clinical preventive care in primary care practice: lack of time and forgetfulness. Such systems relieve the physician of the time-consuming and repetitive task of reviewing the entire patient history to ascertain a patient's risk status. Flow charts, computerized reminders, chart stickers, and chart review by staff are examples of useful systems that, if used and maintained, alert physicians and their staff to the individual preventive service needs of their patients.^{16,19-24}

Example: A small group of physicians decided to purchase a computer system in order to cope with the increasing complexity of managing their practice. The wide variety of excellent practice management systems complicated their search. Once the group targeted their search to those systems that could easily generate useful patient reports and reminders, they were able to narrow their choices and select a system that was right for their practice.

Reminder systems do not need to be elaborate or sophisticated to be effective. A complete medical chart that is well organized and maintained serves better than an outmoded computer system that is incapable of generating concise reports of preventive activity. In short, the usefulness of the reminder system is more important than its sophistication.

Consider continuing medical education programs that emphasize skills that can be applied in clinical practice. "It does not appear that increased levels of continuing education per se will lead to specific changes in performance."¹¹

There is no doubt that traditional continuing medical education (CME) programs increase knowledge. However, there is little evidence that traditional CME significantly influences physician behavior or patient outcomes.^{37,38} Therefore, physicians should not assume that simply increasing their knowledge about preventive recommendations will improve their performance of the same.^{11,39}

Continuing medical education programs that emphasize the development or enhancement of skills, such as flexible sigmoidoscopy,⁴⁰ clinical breast examination,⁴¹ and smoking cessation counseling,^{17,18,25} in contrast, have been effective in improving physician behavior. Physicians should search for CME programs that can actually help facilitate the implementation of preventive activity within their practices, in contrast to programs that increase knowledge but have little practical application to daily clinic routines.

Example: After attending several CME courses dealing with the staging, prognosis, and latest treatment for colorectal cancer, a physician decided that flexible sigmoidoscopy should become a part of his practice. He performed several sigmoidoscopies under the supervision of a colleague before implementing the procedure in his practice. Because the procedure took so long, he soon found that he was doing the procedure less and less. Following an intense CME tutorial, which focused on the development of hands-on skills, the physician was able to decrease the time needed for the procedure. Eventually, he was performing the procedure more frequently with less disruption of his usual practice routine.

Example: While attending a "hands-on" continuing medical education course, a physician who had been in practice for several years was given the opportunity to test his diagnostic skills with recently developed models of the breast and prostate. To his surprise, he was unable to identify several prominent lesions. With slight modifications in his technique, however, he easily taught himself to identify these lesions. He was then able to apply these newly acquired skills immediately in his practice.

Develop state-of-the-art counseling and communication skills. "Despite . . . the evidence that at least 50% of doctors' time with patients is spent in talking, few medical schools have introduced specific training in communication."⁴²

Highly developed communication skills are vital for educating patients about early detection procedures, smoking cessation, diet modification, and other important aspects of health care.^{43,44} For example, physicians with special training in smoking cessation counseling, a communication skill, are more successful in changing their patients behaviors than physicians without similar training.^{17,18}

Brief, carefully worded communications are probably more effective and better received by patients than time-consuming, medically detailed lectures. The goal of

enhanced communication is not to take time, but save time.⁴⁵ The following quotations are examples of brief, specific messages that physicians might adopt to discuss early cancer detection and smoking cessation with patients.

Example: "I recommend yearly mammography for women over 50 years old to detect small breast cancers that can't be felt. Would you be interested in having a mammogram scheduled?"²⁴ (Discuss the American Cancer Society guidelines if indicated by the patient's response.)

Example: "Do you smoke?" "How much?" "Are you interested in stopping smoking?" "As your physician, I must advise you to stop smoking now."²⁵

Keep cost issues in perspective, and minimize economic barriers for patients. ". . . ensuring adequate reimbursement coverage for preventive care services may be a necessary, but not sufficient, step to their more widespread application."⁴⁶

Although cost and reimbursement are frequently cited by physicians as major barriers to preventive services, most patient surveys do not find cost to be a preeminent barrier to preventive care.⁴³ Although concerns for costs should never be discounted, physicians should not assume that procedures are unwanted, unnecessary, or ineffective on the basis of cost and reimbursement alone, especially with the current medicolegal climate.⁴⁶

Physicians can, however, take steps to minimize the problems associated with reimbursement and costs. Within a physician's practice, careful attention to reimbursement provisions and coding benefit both the patient and the physician. Flexible payment schedules and bundling of preventive services into economically attractive packages may be alternatives for those not covered by third-party payers. Low-cost screening facilities have been found to provide accurate test results, and when available, these facilities should be supported.⁴⁷ Similarly, specifically ordering a screening test may avert a facility from proceeding with a more expensive, but identical, diagnostic test.

Example: A gynecologist regularly refers her patients for mammography to a radiology clinic that is located a few blocks from her office. This facility is convenient for her patients, provides prompt and courteous service, and charges competitive fees. With growing frequency, however, she is referring her patients to a low-cost breast imaging center that is across town. Scheduling is not as flexible because of the higher volume, but the quality of the service is equal to the local facility, and the reduction in cost for her patients is significant.

Summary

The principles for improving preventive services and the examples given are not intended to represent a consensus on methods to implement recommendations, nor is the list intended to be complete. The principles are simply intended to be a concise and practical guide. The principles are based on the cumulative experiences of many research efforts to overcome barriers to preventive services. Physicians and other health planners should, therefore, at least consider these principles as they plan changes in the preventive content of their practices.

References

1. Screening for disease: a series from *The Lancet*. London: Adelphi, 1974.
2. National Cancer Institute. Working guidelines for early cancer detection: rationale and supporting evidence to decrease mortality. Bethesda, Md: National Cancer Institute, 1987.
3. American Cancer Society. Report on the cancer-related health checkup. CA 1980; 30:194-240.
4. Canadian Task Force on the Periodic Health Examination. The periodic health examination. Can Med Assoc J 1979; 121:1194-254.
5. US Preventive Services Task Force. Guide to clinical preventive services: an assessment of the effectiveness of 169 interventions. Baltimore: Williams & Wilkins, 1989.
6. Audet AM, Greenfield S, Field M. Medical practice guidelines: current activities and future directions. Ann Intern Med 1990; 113:709-14.
7. Lee PR, Ginsburg PB, LeRoy LB, Hammons GT. The physician payment review commission report to congress. JAMA 1989; 261:2382-5.
8. American Cancer Society. 1989 survey of physicians attitudes and practices in early cancer detection. CA 1991; 40:77-101.
9. Battista RN, Lawrence RS, eds. Implementing preventive services. Am J Prev Med 1988; 4(Suppl 8).
10. Battista RN. Adult cancer prevention in primary care: patterns of practice in Quebec. Am J Public Health 1983; 73:1036-9.
11. Battista RN, Williams JI, MacFarlane LA. Determinants of primary medical practice in adult cancer prevention. Med Care 1986; 24:216-24.
12. Resnicow KA, Schorow M, Bloom HG, Massad R. Obstacles to family practitioners' use of screening tests: determinants of practice? Prev Med 1989; 18:101-12.
13. Orleans TC, George LK, Houpt JL, Brodie KH. Health promotion in primary care: a survey of US family practitioners. Prev Med 1985; 14:636-47.
14. Green LW, Wilson AL, Lovato CY. What changes can health promotion achieve and how long do these changes last? The trade-offs between expediency and durability. Prev Med 1986; 15:508-21.
15. Nutting PA. Health promotion in primary medical care: problems and potential. Prev Med 1986; 15:537-48.
16. Carter WB, Belcher DW, Inui TS. Implementing preventive care in clinical practice: II. Problems for managers, clinicians, and patients. Med Care Rev 1981; 38:195-216.
17. Solberg LI, Maxwell PL, Kottke TE, Gepner GJ, Brekke ML. A systematic primary care office-based smoking cessation program. J Fam Pract 1990; 30:647-54.
18. Cohen SJ, Stookey GK, Katz BP, Drook CA, Smith DM. Encouraging primary care physicians to help smokers quit: a randomized, controlled trial. Ann Intern Med 1989; 110:648-52.
19. McPhee SJ, Bird JA, Jenkins CNH, Fordham D. Promoting cancer screening: a randomized controlled trial of three interventions. Arch Intern Med 1989; 149:1866-72.
20. Davidson RA, Fletcher SW, Retchin S, et al. A nurse-initiated reminder system for the periodic health exam: implementation and evaluation. Arch Intern Med 1984; 144:2167-70.
21. McDonald CJ, Hui SL, Smith DM, et al. Reminders to physicians from an introspective computer medical record: a two-year randomized trial. Ann Intern Med 1984; 100:130-8.
22. Cheney C, Ramsdell JW. Effect of medical records' checklists on implementation of periodic health measures. Am J Med 1987; 87:129-36.
23. Williams BJ. Efficacy of a checklist to promote a preventive medicine approach. J Tenn Med Assoc 1981; 74:489-91.
24. Hahn DL, Berger MG. Implementation of a systematic health maintenance protocol in a private practice. J Fam Pract 1990; 31:492-504.
25. Glynn TJ, Manley MW. How to help your patients stop smoking: a National Cancer Institute manual for physicians. Bethesda, Md: National Institutes of Health, 1989. Publication no. NIH 89-3064.
26. Lewis CE, Clancy C, Leake B, Schwartz SJ. The counseling practices of internists. Ann Intern Med 1991; 114:54-8.
27. Pommerenke FA, Weed DL. Physician compliance: improving skills in preventive medicine practices. Am Fam Physician 1991; 43:560-8.
28. Lomas J, Haynes RB. A taxonomy and critical review of tested strategies for the application of clinical practice recommendations: from "official" to "individual" clinical practice. In: Battista RN, Lawrence RS, eds. Implementing preventive services. Am J Prev Med 1988; 4(Suppl 8):77-95.
29. Love RR. The physicians' role in cancer prevention and screening. Cancer Bull 1988; 40:380-3.
30. Caplow T. Managing an organization. 2nd ed. New York: Holt, Rinehart and Winston, 1983.
31. Rakich JS, Longest BB, Darr K. Managing health services organizations. 2nd ed. Philadelphia: WB Saunders. Revised 1985.
32. Norton PG, Dempsey LJ. Self-audit: its effect on quality of care. J Fam Pract 1985; 21:289-91.
33. Sultz H. Health policy: if you don't know where you're going, any road will take you. Am J Public Health 1991; 81:418-20.
34. Solberg LI, Johnson JM. The office nurse: a neglected but valuable ally. Fam Pract Res J 1982; 2:132-41.
35. Godkin MA, Catlin RJO. Office design. In: Rakel RE, Conn HF, eds. Textbook of family medicine. 3rd ed. Philadelphia: WB Saunders, 1984:chap 70.
36. Pommerenke FA, Dietrich A. Improving and maintaining preventive services. Part I. Applying the patient path model. J Fam Pract 1992; 34:86-91.
37. Haynes BR, Davis DA, McKibbon A, Tugwell P. A critical appraisal of the efficacy of continuing medical education. JAMA 1984; 251:61-4.
38. Lomas J, Anderson GM, Domnick-Pierre K, Vayda E, Enkin MW, Hannah WJ. Do practice guidelines guide practice? The effect of a consensus statement on the practice of physicians. N Engl J Med 1989; 321:1306-11.
39. Love RR. Increasing cancer prevention services calls for modification of continuing medical education. J Cancer Educ 1988; 3:71-3.
40. Rodney WM, Beaber RJ, Jonson R, Quan M. Physician compliance with colorectal cancer screening (1978-1983): the impact of flexible sigmoidoscopy. J Fam Pract 1985; 20:265-9.
41. Campbell HS, Fletcher SW, Lin S. Improving physicians' and nurses' clinical breast examination: a randomized controlled trial. Am J Prev Med 1991; 7(1):1-8.
42. Sanson-Fischer R, Maguire P. Should skills in communicating with patients be taught in medical schools? Lancet 1980; 2:523-6.
43. NCI Breast Cancer Screening Consortium. Screening mammography: a missed clinical opportunity? JAMA 1990; 264:54-8.

44. Spratt JS, Spratt JW. Medical and legal implications of screening and follow-up procedures for breast cancer. *Cancer* 1990; 66: 1351-62.
45. Lipkin M, Quill TE, Napodano RJ. The medical interview: a core curriculum for residencies in internal medicine. *Ann Intern Med* 1984; 100:277-84.
46. McPhee SJ, Schroeder SA. Promoting preventive care: changing reimbursement is not enough. *Am J Public Health* 1987; 77: 780-1.
47. US General Accounting Office. Screening mammography: low-cost services do not compromise quality. Report to congressional committees, 1990; GAO/HRD-90-32.

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