Published in final edited form as:
Patient Educ Couns. 2009 May ; 75(2): 214–219. doi:10.1016/j.pec.2008.09.008.

Initiation of health behavior discussions during primary care outpatient visits

Susan A. Flocke[a,b,c,*], **Robert Kelly**[a,d], and **Janelle Highland**[a]

[a]Department of Family Medicine, Case Western Reserve University, Cleveland, OH, United States

[b]Department of Epidemiology and Biostatistics, Case Western Reserve University, Cleveland, OH, United States

[c]Case Comprehensive Cancer Center, Cleveland, OH, United States

[d]Department of Family Medicine, Fairview Hospital, Cleveland, OH, United States

Abstract

Objective—Despite the importance of health promotion, rates of health behavior advice remain low and little is known about how advice is integrated into routine primary care. This study examines how health behavior topics of diet, physical activity and smoking are initiated during outpatient visits.

Methods—Audio recording of 187 adults visit to five purposefully selected physicians. An iterative analysis involved listening to and discussing cases to identify emergent patterns of initiation of health behavior talk and advice that followed.

Results—Physicians initiated 65% of discussions and used two overarching strategies (1) Structured: a routine to ask about health behavior and (2) Opportunistic: use of a trigger to make a transition to talk about health behavior. Opportunistic strategies identified a greater proportion of patients at risk (50% vs. 34%) and led to a greater rate of advice (100% vs. 75%). Patients initiated one-third of health behavior discussions and were more likely to receive advice if they explicitly indicated readiness to change.

Conclusions—Opportunistic strategies show promise for a higher yield of identifying patients at risk and leading to advice.

Practice Implications—Encouraging patients to be explicit about their readiness to change is likely to increase physician advice and assistance.

*Corresponding author at: 11001 Cedar Ave, Suite 306, Cleveland, OH 44106-7136, United States. Tel.: +1 216 368 3887; fax: +1 216 368 4348. susan.flocke@case.edu. .

Conflict of interest The authors of this manuscript report no actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within 3 years of beginning the submitted work that could inappropriately influence, or be perceived to influence, this work.

I confirm all patient/personal identifiers have been removed or disguised so that the persons described are not identifiable and cannot be identified through the details of the story.

Keywords

Clinician–patient communication; Health behavior change; Primary care; Practice-based research

1. Introduction

Lifestyle behaviors such as tobacco use, lack of physical activity, poor diet and excess weight may be factors in more than 50% of all preventable morbidity and mortality [1]. The National Cancer Institute and the U.S. Preventive Services Task Force (USPSTF) have targeted primary care clinicians as the most important group to provide preventive screening and counseling for behavioral risk factors to the nation. The majority of Americans see a primary care physician each year [2]. Primary care physicians have multiple opportunities to tailor advice for behavioral change over time and within the context of an on-going relationship [3]. Despite the impact of health behaviors on multiple health outcomes, recommendation of strategies for providing brief advice [4,5], and reports that physicians and patients agree that health behaviors are important topics to discuss during routine patient care [6–11], reported rates of diet, physical activity and smoking advice are low [12–19]. Even during visits for well care, when physicians typically focus on prevention [20–23], it has been shown that an average of only 10% of eligible cancer-related health habit topics is discussed [12]. Physician characteristics, office systems, and patient population characteristics explain only a small proportion of the variance in rates of prevention [24–26].

A greater understanding of health behavior advice in primary care outpatient visits is needed to facilitate development of effective interventions. Many studies have explored the competing demands for health behavior advice [27,28], but few studies have focused on how discussions of health behavior change are initiated [29,30]. Utilizing audio recordings of 187 outpatient visits, this paper presents patterns of how discussions of smoking, diet, and physical activity are initiated by physicians and patients during routine outpatient visits and the health behavior talk that follows.

2. Methods

2.1. Study design and sample

The cross-sectional mixed method study included observation and audio recording of five physicians and a consecutive sample of their adult patients seen for outpatient care. The physicians were purposively sampled using existing data from the Direct Observation of Primary Care (DOPC) study [3,31]. The physicians were selected based on two criteria: a high rate of provision of five USPSTF-recommended counseling services and the quality of health behavior advice evaluated by a nurse observer. The physicians were purposely selected for this study in order to maximize the observation of health behavior discussions and the range of approaches that these physicians used to achieve a high rate of advice. Using the DOPC study data, the 138 physician participants were ranked according to the two criteria and the top five physicians were selected for this study. One of the original five physicians invited to participate in this study declined, and a replacement physician was selected and enrolled. Consecutive patient care days were scheduled for data collection with

each physician in order to collect data on a minimum of 30 adult patients per physician. Physician and patient participants were informed that the study was about doctor–patient communication. The study procedures were approved by the University Hospitals of Cleveland Institutional Review Board for Human Investigation.

2.2. Data collection

Consecutive adult patients aged ≥18 visiting each participating physician were informed of the study and invited to participate in the waiting room. Participants completed a brief survey before their visit. The observer accompanied the physician into the examination room to observe and audio record participating patient encounters.

2.3. Measures

The patient survey assessed patient age, gender, and general health status rated on a five-point scale from excellent to poor. The duration of the relationship with the physician and if the patient considered the physician their regular doctor were also assessed. Patient health behavior risk status was determined from the report of smoking and physical activity behavior on the patient survey. If either the patient or the physician formulated excess weight as a problem during the visit the patient was considered at risk for weight. In addition to the audio recording of the patient encounter, the observer coded the type of visit using the National Ambulatory Medical Care Survey (NAMCS) classification [32] and the total face-to-face time with the patient.

Physician actions following the initiation of a health behavior topic were classified into one of five categories ranging from No Response to Active Help with behavior change planning. The categories were developed based in part on reviewing the literature on communication tasks for discussing health behavior change [4,33,34] and routine interaction communication responses. *No Response* was applied when the physician's utterance following the patient's initiation of a topic was not related to the health behavior topic and the topic was not addressed by the physician later in the visit. *Acknowledge* was used when the physician's response included at least one utterance and gave no advice, only affirming that the patient had been heard (e.g. 'uhhuh', 'OK'). *Gathering More Information* involved asking the patient for specific information or for an elaboration of a prior comment. *No Advice, but Encouragement* included reinforcing statements and/or supportive statements. Reinforcing statements were positive responses to patient reports good health behaviors or successful efforts to change health behaviors. Supportive statements were those offered by the physician that lent emotional support or validation to patients' efforts or difficulties in changing health behaviors. *Informational Advice* involved discussion of risks and/or benefits of change and/or recommendation of specific patient action. *Active Help* involved an offer to help with the behavior change, and/or a discussion of a strategy for health behavior change. Referral to additional counseling services and prescription of tobacco cessation medication were also included in the Active Help category. The highest level of physician action is reported when more than one kind of action occurred. For example, if both Informational Advice and Active Help occurred, Active Help is reported.

2.4. Data management

The audio recordings for the patient encounters and dictated field notes were transcribed and organized in Atlas.ti, a text manager. These data represent over 1500 pages of single spaced text. Surveys and direct observation forms were checked for completeness and scanned using Teleform™. The data were tabulated using SPSS™.

2.5. Analyses

Analysis of the text data involved an iterative reading of transcripts, listening to the audio recordings of encounters and identifying features of initiating talk about health behaviors. The data were analyzed by a multidisciplinary group: a family physician, the nurse who observed all of the physicians and encounters, and a health services researcher. The team listened to and discussed each patient encounter. The team's goal was to discover patterns of how discussions of health behavior topics were initiated during routine patient care. Descriptions of the emergent patterns were generated by the group. Then a grid was used to list each instance of discussion of health behaviors and who initiated it, how the discussion was initiated and the health behavior topic. This grid was examined to ensure that the categories captured the full range of ways of initiation observed and each case was re-examined by two research associates to verify categorization. The talk that followed the initiation was then categorized utilizing the template of physician actions regarding health behavior advice.

3. Results

The five family physicians, three women and two men, who participated in the study, were board certified in family medicine. Each of the physicians was in a group practice and had been in practice an average of 16 years (range 13–20). Although in different locations in the Northeast Ohio region, each practice was in a suburban setting ranging from an inner ring suburban to a new development suburban setting. Across the practices, patient populations were diverse in terms of age, gender and socioeconomic level. One practice cared for predominantly African-American patients, two practices predominantly Caucasian, and two practices cared for patients who were about equally likely to be Caucasian or African-American. Data were collected from June 2000 through November 2000.

A total of 187 adult encounters were recorded. The participation rate for the study was 82%, but varied for each physician (range = 75% to 90%). Patients who chose not to participate (n = 41) were similar in gender (percent male 25% vs. 26%), and age to those patients who did participate in the study.

The patient sample was predominately female (74%) and between the ages of 26 and 60 (68%). The majority of patients reported their general health status as good or very good (77%). Eighty-nine percent of patients reported that the visit was with their regular doctor, and 49% reported being a patient of the physician for 3 or more years. Most visits were for acute (46%) or chronic illness care (30%). Thirteen percent of the visits were for well care and 8% of visits were for other reasons. The duration of visits ranged from 2 to 36 min; the

median duration was 13 min. Twenty-four percent of patients self-reported as a smoker. Only 34% of patients reported obtaining moderate physical activity at least 3 days a week.

3.1. How health behavior topics were initiated

Overall, 129 initiations of smoking, diet, physical activity or weight management talk occurred during 95 (51%) of the encounters. Physicians initiated 66% of the health behavior discussions and patients initiated 34% of the health behavior discussions.

3.2. Physician-initiated

Physicians used two overarching strategies to initiate health behavior discussions: Structured and Opportunistic. Structured approaches involved the use of a systematic routine or use of a tool such as a new patient form or a well care checklist to ask about specific health behaviors. Opportunistic approaches involved a trigger or cue that the physician used to make a transition to talk about a health behavior. These two approaches account for 96% of the observed physician initiations and they were observed across physicians as well as across illness and well care visits. The frequencies of physician strategies by patient health behavior risk status are reported in Table 1.

A Structured approach was used for 55% of the physician initiations of a health behavior topic. The most systematic of the Structured approaches included use of new patient or well care checklists and intake forms to initiate discussion of a health behavior topic. In these initiations, health behavior topics were assessed as part of a routine series of questions (e.g. medical history, family medical history). New patient checklist, well care checklist and intake form approaches accounted for 72% of the physician-initiated discussions and yielded identification of four individuals at risk (Table 1). A less systematic structured approach involved a mental checklist. The mental checklist was discernable as a routine pattern of question asking about health behaviors during illness visits for which no specific data recording form was used. This pattern was unlike new patient and well care checklists in which physicians were observed to use a form and health behaviors were just one of many topics assessed in a routine pattern.

The least systematic among this group of approaches was introduction of the health behavior topic as something the physician planned to discuss. This initiation approach was marked by indications of physician prior knowledge of the patient's health behavior status (e.g. smokes cigarettes) and the introduction of the health behavior by the physician as a new topic. In the example below, the doctor asks the patient for an update on her smoking status.

PHYSICIAN: Now um, the other thing that we - I was worried about was your cigarette smoking.

PATIENT#3: Um-hum.

PHYSICIAN: So what's going on with that?

This approach was different from the other kinds of Structured approaches in that the physician indicated prior knowledge of the patient's health behavior. For each of the

instances that this approach was used (n = 6), all patients were currently at risk for the health behavior. This approach positioned the health behavior as a new topic to discuss rather than simply a question to screen for risk.

Overall, the Structured approach initiations identified 12 patients at risk for the health behavior topic (12/47, 26%). As shown in Table 2, among those at risk, 2 (16%) discussions included informational advice and 6 (50%) included Active Help. Among this Active Help group, 5/6 discussions were initiated by the physician as a topic the physician planned to discuss. All of the physicians were observed to use structured approaches; however, none were observed to use all five, the minimum was two and the maximum was four approaches.

Forty-five percent of the physician-initiated discussions involved an Opportunistic strategy. The Opportunistic strategy included approaches that were marked by some trigger that preceded the initiation of the health behavior discussion (Table 1). The physician used the trigger to make a transition to talk about the health behavior and three main groups of triggers were observed: acute symptoms, chronic conditions or something noted in the medical record.

Acute symptoms served as a trigger for initiating talk about related health behaviors in 9/39 (27%) of the cases. Examples include the symptom of cough and sore throat preceding the physician asking about smoking. Chronic conditions or report of lab tests served as a trigger for initiating talk about related health behaviors in 18/39 (46%) of the cases. For example, discussion of current markers of diabetes control transitioned into talk of the patient's eating patterns and how physical activity would greatly benefit efforts to control diabetes. In 19/39 or (49%) of the instances of initiating discussion of a health behavior with this approach, the patient was at risk for the health behavior topic. The medical record was also used as an Opportunistic strategy to initiate discussions of health behavior topics and represent 9/39 or 23% of the cases. Examples include noting an increase in weight documented in the medical record or noting the number of cigarettes the patient reported smoking at the last visit.

In summary, the Opportunistic approach included a trigger to transition discussion from a medical problem to the health behavior topic. The trigger was used by the physician to position the health behavior as relevant to the current topic. When an Opportunistic initiation strategy was used, all patients at risk (n = 19) received either Informational Advice (13/19) or Active Help (6/19), (see Table 2). Among individuals not at risk, almost half received Encouragement, Informational Advice or Active Help (9/20).

3.3. Patient methods of initiating health behavior topics

About one-third of the health behavior discussions were initiated by patients. Patient initiations represented four main patterns: (1) reporting efforts to change behavior (53%); (2) patient requests (21%); (3) relating a behavior to a health condition (9%); or (4) expressing concern or worry about the role of behavior and current symptoms (9%) (see Table 3). Other ways of initiating accounted for 7% of the patient initiations.

Patient reports of efforts were expressed as successes or failed efforts to change behaviors, or as neutral descriptions of current health behavior. The following statement is an example

of a patient report of a successful effort to change diet: “I’m starting a new diet, which is working apparently because I lost 15 pounds!”. In most visits in which success was reported, references to past discussions between physician and patient were incorporated into the talk, underscoring the longitudinal nature of these phenomena. Several patients formulated their report of success to elicit physician praise and in most cases, physicians did provide some positive reinforcement or supportive statement.

More than half of the reports of success also include advice which ranged from a very brief comment about risk “well, up until 3 weeks ago cigarette smoke was a very high risk factor {of heart disease} for you” (discussion of chest pain with smoker who reported she had recently quit) to more in-depth advice, typically pointing out the benefits of change that the patient should be experiencing. In two cases, physician advice included an offer of help to sustain the behavior change.

Patient initiation of a health behavior topic using a report of failure to change behavior was less common, but physicians responded to and provided advice in 4/5 of these cases. Although the number is small, half of the cases received Informational Advice only where as the other half received Active Help that incorporated discussion of strategies for overcoming perceived barriers. In three cases, patient reports of change efforts were expressed in neutral or ambivalent terms and resulted in only brief Informational Advice for 2/3 cases.

The second most frequent pattern of patient-initiated talk of health behaviors was Requests. These included requests for information and specific requests for help to change behavior, (e.g. “I was wondering about what type of a physical activity program that I could get into…”). Another type of inquiry was a specific request for a prescription, e.g., “And I also would like a prescription for diet pills” or “I want you to give me something to help me stop smoking. I’m really at the point now”. Asking questions and specific requests resulted in a range of depth of health behavior change discussions, but were never ignored by the physician. There are several common patterns among this group. First, a high level of readiness to change was implicit in the way that the patient raised the topic. Second, they were all treated by the patient and the physician as a separate topic for discussion, that is, the talk transitioned and focused on that topic.

The next most common pattern of patient initiation (four cases) occurred when patients related their behavior to a health condition that was currently being discussed. In these cases the patient volunteered the health behavior information as relevant to the topic being discussed. This method of patient initiation had the lowest rate of advice. In two of the cases (50%), the health behavior comments were not addressed by the physician at all or were only acknowledged by the physician. In one case, the physician response was confined to a warning about the risk of continuing a behavior. In one case, the physician gave Active Help in the form of detailed advice and the offer of a referral.

The final manner in which patients initiated health behavior discussions was by an expression of concern or worry about symptoms and proposing the health behavior as a potential explanation. When the patient was at risk for the health behavior, this method of patient initiation always led to advice and/or Active Help. In these cases, it was the patient

who expressed the connection between the symptom they were experiencing and the concern about their health behavior.

In summary, patient methods of integrating health behavior topics into the visit involved reporting efforts, asking for information or help, or linking the health behavior to the problem being discussed. About half of the patients who initiated a health behavior topic were at risk. Those not at risk who initiated a topic predominately did so by reporting a successful change (67%). Among patients who initiated a health behavior topic, patient risk status was not strongly associated with physician provision of advice and/or Active Help. However, patients who were at risk and initiated the health behavior topic indicating their readiness to change were two times more likely to receive Active Help than those patients who were unclear about their readiness. Likewise, expression of concern or worry about the effects of the health behavior was associated with greater likelihood of advice and Active Help.

4. Discussion and conclusion

Half of the observed routine primary care visits included an initiation of a health behavior topic and patients initiated the health behavior topic in one-third of those cases. This analysis the initiation of health behavior topics led to two main insights. First, physician use of opportunities for health behavior discussions is frequent and regardless of risk status, typically involves informational advice or Active Help. Second, physicians were most likely to provide advice and assistance when the patient's initiation of health behavior topics indicated readiness to act or an expression of worry about the effects of the health behavior.

4.1. Physician use of opportunities for health behavior discussions

We found that physicians had multiple ways to routinely incorporate health behavior topics into specific types of visits. The main function of the structured approaches was to screen for risk and in this corpus of cases the overall yield of identifying patients at risk was low. Others have shown that those with poor health behaviors (smoke, sedentary, excess alcohol or have excess weight) are less likely to come in for a well care visit [35–37]. Thus, assessing health behavior risk during well care or new patient visits may not be a good use of physician time. The task of systematically identifying patients at risk could more efficiently be addressed with a health risk assessment conducted by other practice staff members or by the patient him or herself. The use of electronic medical records (EMRs) to document and prompt physicians' behavior has expanded dramatically in the past decade [38,39]. While EMRs have great potential to assist in health promotion, prompts are not necessarily a panacea for addressing risky health behaviors [40]. How and when prompts about risk status information are used and the nature and quality of the advice that may follow deserves more thorough investigation.

Others have suggested that physicians should use illness visits to discuss disease related poor health behaviors [5]. Indeed in this sample, we observed the Opportunistic approach to initiating health behavior discussions had the greatest yield of identifying patients at risk. This approach included a trigger to create an opening for the physician to position the health behavior as relevant to the current topic. Others have identified this 'stepwise' move as a

way to transition to a prevention or health behavior topic [29,41]. Cohen et al, report that such an approach was used to address smoking counseling in 8% of visits with smokers [41]. Among our purposive sample of physicians, the opportunistic approach was used to initiate 45% of health behavior discussions and 50% of those were among patients at risk. While this suggests that physicians have the capacity to utilize this approach frequently, examination of a larger corpus of visits and the inclusion of patient outcome data is warranted to better understand the typical course and nature of physician–patient communications during illness.

4.2. Patient-initiated discussions: Explicit readiness to change and topic relevance

Patient initiation of health behavior topics were most likely to lead to Informational Advice and Active Help from the physician when it was explicit that the patient was ready to make a change or that he/she was worried about the health behavior. The clarity of intention to change on the part of the patient alters the physician's task from one of motivating the patient to change the behavior to one of addressing instrumental strategies for change [42,43]. Given the findings of this study, we encourage patients who want to discuss a health behavior change topic with their physician to (1) introduce the health behavior as a separate topic that they would like to address and (2) clearly state that they want to change the health behavior. Likewise, physicians should treat all patient initiations of a health behavior topic as opportunities to discuss health behavior change.

Some study limitations are worth note. First, the purposefully selected sample of family physicians from one geographic region is both a strength and limitation. Our selection of physicians who frequently provide health behavior advice was made to maximize the number of health behavior initiations and discussions for analysis. We would expect health behavior discussions to be less frequent among the general population of family physicians. We do not anticipate that our findings represent all possible ways that health behavior discussions are initiated in the context of a busy primary care practice. But, the pattern of approaches is robust across the study physicians and is likely to be observed among other groups of primary care physicians. At the time of data collection, none of the physicians in the sample had an electronic medical record. This technology would likely increase the rate at which health behavior discussions are initiated by the physician. Second, the data collected for this study are cross sectional and knowledge about prior discussions is limited to what was verbalized during the encounter. Likewise, follow up data to evaluate the effect of the advice provided during these outpatient visits on patient health behavior outcomes should be the focus of further study.

4.3. Conclusions

Physicians and patients utilize a variety of ways to initiate health behavior discussions during routine patient care. The Systematic approach used by physicians had a low yield of identifying patients at risk and was less likely to lead to advice compared to the Opportunistic approach. Patients who raise the topic and are explicit in their desire to make a change are more likely to engage the physician in a discussion of health behavior change.

4.4. Practice implications

Physicians are encouraged to focus limited face-to-face time on situations that are likely to result in productive discussions of health behaviors. The Opportunistic approach appears feasible, but additional research to evaluate the effect on patient behavior change outcomes is required. Patients are encouraged to be explicit about their readiness to change, as this is likely to increase physician advice and assistance.

Acknowledgments

We wish to acknowledge the volunteer participation of the clinicians, staffs and patients without whom the study would not be possible. We also wish to thank the members of our writing workgroup for helpful comments on earlier drafts of this manuscript.

Role of funding: The study was funded in part by grants from the National Cancer Institute (CA 86046 and CA 105292). The sponsor did not play a role in the design, collection, analysis or interpretation of data, in the writing of the report or in the decision to submit the paper for publication.

References

[1]. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. J Am Med Assoc. 2004; 291:1238–45.

[2]. Cherry, DK.; Burt, CW.; Woodwell, DA. National ambulatory medical care survey: 2001 summary. advanced data from vital and health statistics; no 337. National Center for Health Statistics; Hyattsville, MD: 2003.

[3]. Stange KC, Zyzanski SJ, Jaen CR, Callahan EJ, Kelly RB, Gillanders WR, Shank JC, Chao J, Medalie JH, Miller WL, Crabtree BF, Flocke SA, Gilchrist VJ, Langa DM, Goodwin MA. Illuminating the 'black box'. A description of 4454 patient visits to 138 family physicians. J Fam Practice. 1998; 46:377–89.

[4]. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions. An evidence-based approach. Am J Prev Med. 2002; 22:267–84. [PubMed: 11988383]

[5]. U.S. Preventive Services Task Force. Guide to clinical preventive services, periodic updates. 3rd ed. Agency for Healthcare Research and Quality; Rockville, MD: May. 2004

[6]. Wechsler H, Levine S, Idelson R, Schor E, Caokley E. The physician's role in health promotion revisited—a survey of primary care practitioners. New Engl J Med. 1996; 334:996–8. [PubMed: 8596615]

[7]. Osborn EH, Bird JA, McPhee SJ, Rodnick JE, Fordham D. Cancer screening by primary care physicians: can we explain the differences? J Fam Practice. 1991; 32:465–71.

[8]. Valente CM, Sobal J, Herbert L, Muncie J, Levine DM, Antlitz AM. Health promotion: physicians' beliefs, attitudes, and practices. Am J Prev Med. 1986; 2:82–8. [PubMed: 3453166]

[9]. Vogt TM, Hollis JF, Lichtenstein E, Schor EL, Coakley E. The medical care system and prevention: The need for a new paradigm. HMO Practice. 1996; 12:5–13. [PubMed: 10178378]

[10]. Cogswell B, Eggert MS. People want doctors to give more preventive care. A qualitative study of health care consumers. Arch Fam Med. 1993; 2:611–9. [PubMed: 8118580]

[11]. Healthy people 2010. Understanding and improving health. 2nd ed. U.S. Government Printing Office: U.S. Department of Health and Human Services; Washington, DC: Nov. 2000

[12]. Stange KC, Flocke SA, Goodwin MA, Kelly RB, Zyzanski SJ. Direct observation of rates of preventive service delivery in community family practice. Prev Med. 2000; 31:167–76. [PubMed: 10938218]

[13]. Anis NA, Lee RE, Ellerbeck EF, Nazir N, Greiner KA, Ahluwalia JS. Direct observation of physician counseling on dietary habits and exercise: patient, physician, and office correlates. Prev Med. 2004; 38:198–202. [PubMed: 14715212]

[14]. Heaton PC, Frede SM. Patients' need for more counseling on diet, exercise, and smoking cessation: results from the national ambulatory medical care survey. J Am Pharm Assoc. 2006; 46:364–9.

[15]. Rosen MA, Logsdon DN, Demak MM. Prevention and health promotion in primary care: baseline results on physicians from the insure project on life-cycle preventive health services. Prev Med. 1984; 13:535–48. [PubMed: 6527994]

[16]. Makuc DM, Freid VM, Kleinman JC. National trends in the use of preventive health care by women. Am J Public Health. 1989; 79:21–6. [PubMed: 2909176]

[17]. Lurie N, Manning WG, Peterson C, Goldberg GA, Phelps CA, Lillard L. Preventive care: do we practice what we preach? Am J Public Health. 1987; 77:801–4. [PubMed: 3592032]

[18]. Anderson L, May DS. Has the use of cervical, breast, and colorectal cancer screening increased in the United States? Am J Public Health. 1995; 85:840–2. [PubMed: 7762721]

[19]. Kottke TE, Solberg LI, Brekke ML, Cabrera A, Marquez MA. Delivery rates for preventive services in 44 midwestern clinics. Mayo Clin Proc. 1997; 72:515–23. [PubMed: 9179135]

[20]. Sox C, Dietrich A, Tosteson T, Winchell C, Labaree C. Periodic health examinations and the provision of cancer prevention services. Arch Fam Med. 1997; 6:223–30. [PubMed: 9161346]

[21]. Frame PS. The complete annual physical examination refuses to die. J Fam Practice. 1995; 40:543–5.

[22]. Rebelsky MS, Sox CH, Dietrich AJ, Schwab BR, Labaree CE, Brown-Kinney N. Physician preventive care philosophy and the five year durability of a preventive services office system. Soc Sci Med. 1996; 43:1073–81. [PubMed: 8890408]

[23]. Luckman R, Melville SK. Periodic health evaluation of adults: a survey of family physicians. J Fam Practice. 1995; 40:547–54.

[24]. Belcher DW, Berg AO, Inui TS. Practical approaches to providing better preventive care: are physicians a problem or a solution? Am J Prev Med. 1988; 13(13 Suppl):27–48. (In: Implementing Preventive Services). [PubMed: 3079141]

[25]. Litaker D, Flocke SA, Frolkis JP, Stange KC. Physicians' attitudes and preventive care delivery: insights from the DOPC study. Prev Med. 2005; 40:556–63. [PubMed: 15749138]

[26]. Flocke SA, Crabtree BF, Stange KC. Clinician reflections on promotion of healthy behaviors in primary care practice. Health Policy. 2007; 84:277–83. [PubMed: 17543414]

[27]. Jaén CR, McIlvain H, Pol L, Phillips RL, Flocke SA, Crabtree BF. Tailoring tobacco counseling to the competing demands in the clinical encounter. J Fam Practice. 2001; 50:859–63.

[28]. Crabtree BF, Miller WL, Tallia AF, Cohen DJ, DiCicco-Bloom B, McIlvain HE, Aita VA, Scott JG, Gregory PB, Stange KC, McDaniel RR Jr. Delivery of clinical preventive services in family medicine offices. Ann Fam Med. 2005; 3:430–5. [PubMed: 16189059]

[29]. Scott JG, Cohen D, DiCicco-Bloom B, Orzano AJ, Gregory P, Flocke SA, Maxwell L, Crabtree B. Speaking of weight: how patients and primary care clinicians initiate weight loss counseling. Prev Med. 2004; 38:819–27. [PubMed: 15193904]

[30]. Pilnick A, Coleman T. "I'll give up smoking when you get me better": Patients' resistance to attempts to problematise smoking in general practice (gp) consultations. Soc Sci Med. 2003; 57:135–45. [PubMed: 12753822]

[31]. Stange KC, Zyzanski SJ, Smith TF, Kelly R, Langa DM, Flocke SA, Jaén CR. 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; 36:851–67. [PubMed: 9630127]

[32]. Schappert, SM. Advance data from vital and health statistics. National Center for Health Statistics; Hyattsville, MD: 1996. National ambulatory medical care survey: 1994 summary.

[33]. Goldstein, MG.; De Pue, J.; Kazura, A.; Niaura, R. Models for provider–patient interaction: applications to health behavior change. In: Shumaker, SA.; Schron, EB.; Ockene, JK.; McBee, WL., editors. The handbook of health behavior change. 2nd ed. Springer Publishing Company, Inc.; New York: 1998. p. 85-113.

[34]. Dube CE, O'Donnell JF, Novack DH. Communication skills for preventive interventions. Acad Med. 2000; 75(7 Suppl):S45–54. [PubMed: 10926040]

[35]. Brown J, Melinkovich P, Gitterman B, Ricketts S. Missed opportunities in preventive pediatric health care: immunizations or well-child care visits? AJDC. 1993; 147:1081–4. [PubMed: 8213680]

[36]. Culica D, Rohrer J, Ward M, Hilsenrath P, Pomrehn P. Medical checkups: who does not get them? Am J Pub Health. 2002; 92:88–91. [PubMed: 11772768]

[37]. Preisser JS, Cohen SJ, Wofford JL, Moran WP, Shelton BJ, McClatchey MW, Wolfe P. Physician and patient predictors of health maintenance visits. Arch Fam Med. 1998; 7:346–51. [PubMed: 9682688]

[38]. Kawamoto K, Houlihan CA, Balas EA, Lobach DF. Improving clinical practice using clinical decision support systems: a systematic review of trials to identify features critical to success. Brit Med J. 2005; 330:765. [PubMed: 15767266]

[39]. Garg AX, Adhikari NK, McDonald H, Rosas-Arellano MP, Devereaux PJ, Beyene J, Sam J, Haynes RB. Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: a systematic review. J Am Med Assoc. 2005; 293:1223–38.

[40]. Bodenheimer T, Grumbach K. Electronic technology: a spark to revitalize primary care? J Am Med Assoc. 2003; 290:259–64.

[41]. Cohen D, DiCicco-Bloom B, Ohman-Strickland P, Headley A, Orzano J, Levine J, Scott J, Crabtree B. Opportunistic approaches for delivering preventive care in illness visits. Prev Med. 2004; 38:565–73. [PubMed: 15066359]

[42]. Botelho, RJ. Beyond advice: becoming a motivational practioner. Richard J Botelho; Rochester, New York: 2002.

[43]. Rollnick, S.; Mason, P.; Butler, C. Health behavior change: a guide for practitioners. Churchill Livingstone; New York: 1999.

Table 1

Methods of physician initiation of discussions of smoking, diet, or exercise.

Physician-initiated discussions	Patient health behavior (*n*)	
	Not at risk	At risk
Structured		
New patient checklist	14	2
Well care checklist	13	2
Intake form	3	0
Physician mental checklist	5	2
Physician planned to discuss	0	6
Total	35	12
Opportunistic		
Acute problem	6	3
Chronic condition	8	10
Medical record	3	6
Other	3	0
Total	20	19
Grand total	55	31

Table 2

Physician actions that follow physician initiation of health behavior discussion.

	n	No response	Acknowledged only	Gather more information	No advice but encouragement	Informational advice	Active Help offered
Structured							
Not at risk	35	19	3	4	3	3	3
At risk	12	0	3	0	0	2	6
Opportunistic							
Not at risk	20	7	2	2	2	3	4
At risk	19	0	0	0	0	13	6
Grand total							
Not at risk	55	26	5	5	6	6	7
At risk	31	0	3	0	0	16	6

Table 3

Methods of patient initiation of discussions of smoking, diet, or exercise.

Patient-initiated discussions	Patient health behavior (*n*)		Physician action
	Not at risk	At risk	Advice or Active Help among at risk
Reporting efforts to change			
Successes	14	0	
Failures	0	5	
Neutral	1	3	
Total reporting efforts to change	15	8	6
Patient request	4	5	3
Relates behavior to health condition	0	4	2
Concern or worry	1	3	3
Other	1	2	1
Total	21	22	13