

Opportunistic Preventive Services Delivery

Are Time Limitations and Patient Satisfaction Barriers?

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BACKGROUND. The use of illness visits as opportunities to increase the delivery of preventive services has been widely recommended, but its feasibility in community practice is not known. We examined the prevalence of this opportunistic approach to providing preventive services, and the degree to which patient satisfaction and time limitation are barriers.

METHODS. Consecutive patient illness visits to 138 community family physicians were directly observed. Visits by patients who received at least one preventive service recommended by the US Preventive Services Task Force were compared with visits by patients not receiving any recommended preventive services, controlling for potentially confounding patient characteristics.

RESULTS. Among 3547 illness visits, preventive services were delivered during 39% of visits for chronic illness and 30% of visits for acute illness. Opportunistic health habits counseling occurred more frequently than screening or immunization. Visit satisfaction reported by 2454 patients using the Medical Outcomes Survey 9-item Visit Rating Scale was not different during illness visits with or without the delivery of preventive services. The duration of illness visits that included preventive services was an average of 2.1 minutes longer than illness visits without such interventions (95% confidence interval, 1.7 - 2.4).

CONCLUSIONS. The delivery of preventive services during illness visits is common in community practice and is well accepted by patients. The expansion of an opportunistic approach to providing preventive services will require attention to time-efficient approaches.

KEY WORDS. Preventive health services; patient satisfaction; time management; counseling; physicians, family. (*J Fam Pract* 1998; 46:419-424.)

Despite widespread acceptance of the importance of preventive services in primary care,^{1,2} the actual rates of delivery are low.^{2,7} Health maintenance visits to primary care clinicians are the most commonly used vehicle for the delivery of preventive services.^{8,10} However, one reason that preventive services delivery rates are low is that many patients do not visit a clinician regularly for such well care.¹¹ The Canadian Periodic Health Examination Task Force estimated that only 28% of the population is reached with a strategy of delivering preventive services through dedicated health maintenance visits to clinicians, and noted that "more research is needed to establish the existing degree of integration of preventive and curative practices and to improve our understanding of the determinants of integration."¹² Low rates of health maintenance visits are a particular problem among underserved

populations who could benefit most from preventive services.¹³⁻¹⁶ In addition, although the rate of providing preventive services during health maintenance visits is much higher than during illness visits,^{8,10,17} the provision of preventive services solely through well care visits has been shown to be impractical in actual practice, because regular health maintenance visits for all patients would overwhelm the schedule of a typical family practice.¹⁸

The US Preventive Services Task Force and the Canadian Periodic Health Examination Task Force recommend using illness visits as opportunities for providing preventive services.^{1,12} Because most Americans see a physician during any given year,¹⁹ and because a high percentage of these visits are to family physicians and other primary care clinicians,²⁰ the opportunistic provision of preventive services during illness visits has great potential for providing targeted preventive services to a large portion of the population.

High rates of missed opportunities for childhood immunization,^{11,21-25} and screening for cervical cancer,²⁶ cholesterol,²⁷ lead, and tuberculosis,²⁸ have been documented for patients seen in various settings. It is not known, however, how often illness visits are used for the delivery of a broad range of preventive services in community primary care practice. In addition, the public health potential of opportunistic preventive services delivery may be limited by the acceptability of this

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approach to patients and by the additional time demands of adding these services to visits for illness. In this article, we describe the current use of illness visits for the delivery of preventive services in community family practice, and determine if decreased patient satisfaction and increased time demands are barriers to this approach.

METHODS

STUDY DESIGN AND DATA COLLECTION

Our analysis is part of a larger study of the content of primary care practice, whose methods have been described elsewhere in detail.^{29,30} Briefly, the Direct Observation of Primary Care (DOPC) study, a cross-sectional study of the content of outpatient visits to family physicians in northeast Ohio, was conducted from October 1994 through August 1995. While providing outpatient care, each participating physician was visited by a team of two research nurses on 2 separate days of observation, scheduled 4 to 5 months apart. Consecutive patients seen during the 2 observation days were informed about the study in the waiting room before meeting with their physician, and were enrolled if they gave verbal informed consent. The research nurses collected data on the content and context of the office visit using direct observation of the patient visit, a patient exit questionnaire, and medical record review. Parents were instructed to complete the questionnaire for patients younger than 13 years of age, and to assist patients aged 13 to 17, if necessary. To avoid biasing their behavior, physicians were informed that the study would use multiple methods to examine the content of the ambulatory patient visit, but no specific hypotheses were shared with the physicians, office staffs, or patients.

MEASURES

Direct observation by the research nurses was used to measure visit characteristics, including length of visit, reason for visit, number of problems addressed, and delivery of specific clinical preventive services. Reason for visit was measured with the typology from the National Ambulatory Medical Care Survey.³² Since the focus of this article is on the delivery of preventive services during illness visits, visits for reasons other than acute or chronic illness were excluded.

Data on patient characteristics including age, sex, race, number of problems on the chronic problem list, and previous receipt of preventive services were obtained from the medical record. Patients' health status was determined from the patient exit questionnaire. Health status was measured using a 5-item modified version^{29,33} of the Medical Outcomes Study (MOS) 6-item General Health Survey.³⁴ Patient satisfaction was assessed with the MOS 9-item Visit Rating Scale³⁵ and a single item on the exit questionnaire that asked patients to rate the degree to which their expectations for the visit had been met, using a 5-point Likert-type scale.

The preventive services interventions used in this study were based on the US Preventive Services Task Force (USPSTF) guidelines.¹ Patient eligibility for specific preventive services was determined using an age- and sex-specific algorithm recommended by the USPSTF.³⁶ Patients whose medical record indicated that they had not received a particular service within the time frame recommended for their age and sex were considered eligible for that service. Direct observation was used to measure whether the individual received services for which they were eligible.

Preventive services were divided into three categories (screening, health habits counseling, and immunization services) and summary scores for each category were calculated. A dichotomous variable indicated whether a patient received any preventive services for which they were eligible during the observed outpatient visit. Height, weight, and blood pressure measurements were excluded from the indicator, since these were commonly performed by medical assistants or nurses on most visits.

ANALYSES

T tests were used to compare the two outcome variables (duration of the visit and patient satisfaction with the visit) between patients who received or did not receive any preventive services for which they were eligible. These analyses had a power of 95% to detect a difference of 0.15 standard deviation in the visit duration and satisfaction measures, assuming an alpha of .05.³⁷ Analyses were repeated using analysis of covariance to adjust for potentially confounding patient characteristics, including patient demographics and health status indicators. Additional stratified analyses were performed to ascertain if the association of patient satisfaction with opportunistic preventive services delivery varied with the type of illness visit or with the type of preventive services delivered.

RESULTS

Participating physicians were demographically similar to active practicing members of the American Academy of Family Physicians.^{29,30} The study sample represents the recent demographic trend of more female and residency-trained physicians.

Of 4994 patients presenting for care to their family physicians during the 2 observation days, 89% (4454) agreed to have their visits observed. Medical records were available for review for 99.5% of the 4454 observed visits; of those, 831 were for well care, prenatal care, or administration, and were excluded from consideration. Thirty-nine patients missing data for the length of visit and 15 patients for whom age was unreported were also excluded from analyses. Among the remaining 3547 visits, patient questionnaires were returned by 2595 (73%). Patients were excluded if they were missing more than one of the satisfaction items ($n=126$), leaving 2454 illness visits for which

TABLE 1

The Preventive Services Most Frequently Delivered During Illness Visits (N= 3547)

Service*	No. Eligible for Service	Rate of Delivery to Eligible Patients, %
Health habits counseling		
Tobacco (smokers only)	146	42
Exercise	995	42
Tobacco history	885	22
Alcohol history	974	17
Estrogen discussion	375	14
Diet (cholesterol/fat)	1128	13
Contraception	542	12
Screening		
Mammogram	135	16
Cholesterol	147	16
Urinalysis	201	10
Papanicolaou smear	358	6
Immunization		
Influenza	138	33
DPT	29	7
Pneumovax	210	6

* Age, sex, and interval eligibility criteria were based on US Preventive Services Task Force recommendations.¹

DPT denotes diphtheria, pertussis, and tetanus.

a patient satisfaction score was available. The characteristics of the patients presenting for illness visits were similar to patients coming to see family physicians participating in the 1994 National Ambulatory Medical Care Survey (NAMCS) in age (NAMCS = 38 years), sex (NAMCS = 58% female), and race (NAMCS = 88% white). Similar to the larger DOPC study sample,^{30,31} patients who returned a questionnaire were older, more likely to be white, and more likely to be female.

All patients were eligible for at least one preventive service recommended by the USPSTF. Delivery of at least one recommended preventive service (excluding blood pressure, weight, and height measurements) was observed during 32.5% of all illness visits, with an average of 1.7 services delivered per visit. Opportunistic delivery occurred more often during visits for chronic care (39%, 1013 visits) than during visits for acute care (30%, 2534 visits, $P < .0001$). Health habits counseling was performed during 28% of all illness visits, screening services during 4%, and immunizations during 5%. During a small percentage of visits, preventive services were provided for more than one category. The preventive services most commonly performed during illness visits are shown in Table 1.

The mean length of illness visits during which preventive services were discussed was 2.7 minutes longer than illness visits without preventive services. As shown in Table 2, when controlling for patient age, sex, race, health status, reason for visit, and number of chronic problems, the duration of the visit remained significantly longer for those receiving at least one preventive service (adjusted mean duration 10.9 vs 8.8 minutes).

Patient satisfaction was not different for illness visits with or without preventive services, even when controlling for length of visit, patient demographics, and health status indicators (Table 2). Findings were similar when patient education was also included as a covariate for adult patients. Patients' report of the degree to which their expectations were met also showed no difference for visits with preventive services. Additional analyses stratified by type of illness visit and type of preventive service similarly showed no differences in satisfaction measures.

DISCUSSION

The delivery of clinical preventive services during illness visits is a potentially powerful strategy for increasing the rate at which primary care physicians can help their patients prevent illness.¹ The use of illness visits for prevention has two very important advantages. First, it allows primary care clinicians to offer preventive services to all active patients, even those who do not come in for periodic health examinations. Second, illness visits may represent "teachable moments,"^{38,39} during which specific preventive services can be targeted toward specific patient illnesses or risk factors. Two recent articles have shown that

physicians deliver smoking cessation advice at a higher rate during patient visits for acute respiratory illness and chronic conditions for which smoking is a risk factor.^{40,41} The current study shows a moderately high rate of use of illness visits to provide preventive services, particularly health habits counseling services. Despite the limited evidence for the effectiveness of most health habits counseling,¹ changing even a small percentage of patients' health habits can have a large public health impact.⁴²

The findings of our study support a strategy of taking advantage of opportunities to provide preventive services. Patient satisfaction does not appear to be a barrier to the delivery of clinical preventive services, at least if these services are selectively integrated into illness visits by practicing family physicians. Moreover, health habits counseling, screening, and immunizations appear to be equally well accepted during visits for acute or chronic illness. This is an important finding, since it was plausible that patients would be dissatisfied with clinicians adding preventive services, with no immediate benefit, to illness visits.⁴³ One British study of 81 patient visits to five physicians in a single general practice found no differences in patient satisfaction among patient visits with and without discussions of health habits.⁴³ Several studies have documented high levels of patient interest in preventive medical care,⁴⁴⁻⁴⁶ an interest that is reportedly shared by their physicians,⁴⁷⁻⁵⁰ but often not actualized during patient visits.

The literature also points to a potent barrier to provid-

TABLE 2

Visit Duration and Patient Satisfaction with Opportunistic Preventive Services Delivery

Characteristic	Visits With Preventive Services	Visits Without Preventive Services	P
Duration of Visit, minutes (SD)*	10.89 (5.7) (n=1153)	8.84 (4.4) (n=2354)	<.0001
Patient Satisfaction†			
Global‡	4.28 (0.7) (n=798)	4.28 (0.7) (n=1656)	1.0
By type of illness visit ‡			
Acute illness	4.25 (0.7) (n=514)	4.27 (0.6) (n=1216)	.54
Chronic illness	4.34 (0.6) (n=284)	4.29 (0.7) (n=440)	.35
By type of preventive service‡			
Health habits counseling	4.27 (0.6) (n=673)	4.28 (0.7) (n=1781)	.72
Screening	4.30 (0.6) (n=260)	4.28 (0.7) (n=2194)	.59
Immunization	4.34 (0.6) (n=114)	4.31 (0.7) (n=2340)	.64
Expectations Met (1=not at all, 5=totally)	4.40 (0.8)	4.38 (0.8)	.73

* Adjusted for patient age, sex, race, self-reported health status and number of problems on the problem list.
 † Adjusted for patient age, sex, race, self-reported health status and number of problems on the problem list, and duration of the visit.
 ‡ Assessed by the Medical Outcomes Survey 9-item Visit Rating Scale.

ing prevention interventions: time. Lack of time⁴⁸⁻⁵¹ among the competing demands of primary care practice⁵² is often cited as a major barrier to clinical preventive services. The 2 additional minutes of illness visit duration involving preventive services delivery in part relates to the time needed to deliver the health habits counseling, which accounted for the majority of opportunistic preventive interventions. Ordering additional screening tests or immunizations, or providing very brief health habits advice,⁵³⁻⁵⁴ could conceivably be delivered in less time. The additional 2 minutes could also be accounted for by other characteristics of visits in which preventive services were delivered that were not fully controlled in the adjusted analyses.

Understanding the characteristics of patients and visits that involve opportunities for delivering preventive services will be useful for designing strategies to increase the use of illness visits for prevention. Such an analysis is provided in a companion report.⁵⁵ Three strategies have the potential to make opportunistic clinical prevention feasible in busy primary care practices: (1) "finding the time" by eliminating low-yield services; (2) making a commitment to consistently deliver brief services to all patients, rather than taking more time-intensive approaches inconsistently; and (3) developing systems to involve office staff and material aids to enhance the effi-

ciency of identifying, tracking, and delivering services for which patients are eligible.

Reviews of scientific evidence and as yet unpublished data from our study have shown that physicians spend moderate amounts of time providing preventive services of unproven efficacy.⁵⁶ In addition, considerable time is spent on physical examinations that are unrelated to patients' complaints or chronic illnesses and have no proven preventive benefit.⁵⁷ This time could be profitably redirected to opportunistic delivery of preventive services of proven benefit. Trimming these nonproductive services could make time for clinical preventive services that have been shown to reduce morbidity and mortality.

David Hahn, in his classic 1990 study,⁵³ showed the potential of a single clinician with an organized protocol and a commitment to consistently deliver brief services to all patients. His data are among the highest published rates of patients being up to date with preventive services. These high rates were achieved by using a flow sheet to

review preventive services with every patient in his practice during every outpatient visit. His protocol took an average of 2.1 minutes to provide very brief health habits advice, screening, and immunization, and to schedule follow-up visits for services requiring more time, such as flexible sigmoidoscopy. Following the protocol resulted in no diminution in the number of patients seen per month, presumably because less time was spent on inefficient methods of preventive services delivery.

Despite the success of Hahn's physician-driven protocol and other time-efficient methods,⁵⁴ in most practice settings physicians find it difficult to make prevention a priority because of the greater urgency of providing illness care and meeting other competing demands.⁵² Numerous office systems⁵⁸⁻⁶² have been found to be helpful in enhancing preventive services delivery, and are likely to be particularly useful for increasing opportunities for prevention discussion during illness visits. These include reminder systems⁶³ such as flow sheets,⁶⁴⁻⁶⁶ patient activation materials such as patient-held mini-records,⁶⁷⁻⁶⁸ and greater involvement of nonphysician personnel in the delivery of clinical preventive services.^{69,70} These techniques, combined with a commitment to deliver clinical preventive services during visits for illness in addition to well care, have the potential to greatly increase the rate at which patients

receive important preventive services.

To our knowledge, this is the first large study to document the prevalence of opportunistic clinical preventive services delivery, and to examine its effect on the length of the outpatient visit and on patient satisfaction. The study has a number of strengths, including a comprehensive medical record-based ascertainment of patient eligibility for preventive services and a direct observation method of measuring the delivery of a broad range of preventive services in a large sample of patient visits to community family physicians. The major study limitation is patient nonresponse to the exit questionnaire, which could conceivably have resulted in underreporting of patient dissatisfaction. However, it is unlikely that this would have differentially affected patients who did and did not receive clinical preventive services during illness visits, and therefore is unlikely to have altered the study findings.

CONCLUSIONS

The findings of our study suggest that community family physicians use a moderate percentage of illness visits as opportunities for preventive services delivery. The current approach to choosing patients and opportunistic preventive services maintains patient satisfaction, despite the potential for dissonance between the reason for the visit and a preventive itinerary. The majority of illness visits that do not currently include preventive services delivery may represent opportunities for additional preventive efforts. The ability of physicians and office staff to take advantage of these prevention opportunities will depend on the development of strategies for managing the additional time demands of this opportunistic approach.

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