

Physician Agreement with US Preventive Services Task Force Recommendations

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Background. No large-scale work has yet assessed the reactions of physicians to the report of the US Preventive Services Task Force (USPSTF), despite its potential for fostering a consensus among practitioners. This study undertook a survey of family physicians to assess their agreement with the recommendations of the Task Force.

Methods. A survey containing the verbatim summary recommendations of the USPSTF was mailed to all 1784 active members of the Ohio Academy of Family Physicians.

Results. No evidence of selection bias was found among the 898 responding physicians. The average physician agreed with 88% of the recommendations. For a number of recommendations, however, particularly those in which the Task Force differed with the

American Cancer Society, there was a high level of disagreement. Physician disagreement with the recommendations was associated with older age, not having completed a residency, male sex, less prior exposure to the USPSTF guidelines, and greater perception of the impracticality of applying them.

Conclusions. The high level of agreement with most USPSTF recommendations implies that they represent an emerging consensus about which preventive services should be delivered. Attempts at USPSTF guideline dissemination should focus on recommendations with high agreement. Additional research is needed to assess the reasons for disagreement.

Key words. Preventive health services; preventive medicine; health planning guidelines, physicians.

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Although there is fairly wide acceptance of the importance of prevention in primary care, there has been a lack of consensus on the importance of many specific preventive services.¹⁻⁸ It has been recognized that "a major barrier to the incorporation of prevention in primary care is the lack of agreement among recommending organizations about which services are appropriate."⁹ "The level of uncertainty leaves the practicing physician with no solid conceptual basis, and the consequent lack of coherence discourages a full commitment to health promotion activities."¹⁰ Thus, in overcoming the many barriers to the implementation of preventive services in primary care practice,^{1-4,11-14} an important first step is to address physicians' agreement with recommendations for specific

interventions.¹⁵ Despite additional concerns about the feasibility of providing even preventive services for which consensus exists,^{4,10,11,16-19} it seems obvious that physicians will not deliver services that they do not believe are important. Similarly, physicians may continue to provide services that they believe in, even when the delivery of these services is not supported by scientific evidence.^{20,21}

Multiple experts, groups, and organizations have established guidelines for preventive service delivery.^{1,6-8,22} Among expert recommendations, the report of the United States Preventive Services Task Force (USPSTF)¹ is the most wide-ranging, well researched, and authoritative work on clinical preventive services. It is likely to be the standard for recommended services for many years. The USPSTF made recommendations for preventive service delivery based on a rigorous evaluation of the scientific evidence for preventive interventions. Although the Task Force included experts in medical practice, public health, and health policy, and received input from a wide range of constituencies, there has been little work that investigates practicing physicians' opin-

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ions about the recommendations. It is important to determine not only whether physicians agree with the recommendations, but also how physicians view the practicality of implementing the recommendations in everyday practice.

The assessment of physician agreement or disagreement is a first step in examining the dissemination and implementation of the Task Force's work. If physician agreement with specific Task Force recommendations is low, then emphasis should be placed on determining the reasons for this disagreement, so that a consensus can be developed. On the other hand, if agreement is already high for particular recommendations, priority should be given to studying and implementing more effective ways of actually delivering the agreed upon services to all eligible patients.

Among physicians, family physicians account for the largest proportion (30%) of office visits,²³ and see patients representing the full range of age, sex, and health status covered by the USPSTF recommendations. The current study was designed to assess the level of agreement of family physicians with the entire set of USPSTF guidelines, to identify preventive recommendations for which more work is required to achieve a consensus, and to identify the characteristics of physicians with lower levels of agreement.

Methods

A mailed survey was sent to all 1784 active members of the Ohio Academy of Family Physicians in the fourth quarter of 1990, approximately 1 year after publication of the USPSTF report.¹ The survey instrument contained all the verbatim abridged recommendations of the US Preventive Services Task Force, taken from the beginning of each chapter in their report.¹ After reading each recommendation, responding physicians were asked to indicate whether they agreed or disagreed. After reviewing all the recommendations, physicians were also asked to indicate (1) their overall assessment of the recommendations' practicality; (2) whether they generally favored more or less intervention if they disagreed; (3) their prior exposure to the Task Force recommendations; (4) and whether they believed themselves to be more or less prevention-oriented than other family physicians. The physicians were also asked to provide demographic information including age, sex, race, completion of residency training, type of practice, and size of practice community. Physicians indicated the perceived practicality of each recommendation on a 7-point Likert scale, anchored by "very practical" and "very impractical." All other items had categorical responses, except for age.

The initial mailing was followed in 1 week by a reminder post card. A second mailing to all nonrespondents was sent 1 month after the initial mailing, followed by a third mailing 2 months later. To increase the response rate and to offer responding physicians some compensation for their time, all physicians who returned questionnaires were awarded 1 hour of prescribed continuing medical education credit.

Demographic data on the age, sex, and residency training status of all members of the Ohio Academy of Family Physicians were obtained for comparison with the study sample. To further assess if physicians responding to the questionnaire differed from Ohio family physicians as a whole, a random sample of 120 physicians was chosen for closer follow-up. Nonresponding physicians in this sample received a handwritten personalized message on the cover letter for the second mailing, and were each telephoned by one of the physician investigators, who personally encouraged them to return the study questionnaire.

Analyses were performed using the SPSS-PC statistical software package.²⁴ Data from the sample of 120 vigorously recruited physicians were compared with data from the study respondents in the rest of the sample using *t* tests for continuous variables and the chi-square statistic for categorical variables. For the entire study sample, the frequency of disagreement with individual recommendations was tabulated and rank-ordered.

To examine the association of physician characteristics with disagreement, the percentage of disagreement was calculated by counting the number of items with which each physician disagreed, and dividing by the total of 150 items. This created a continuous variable representing the percentage of recommendations with which each physician disagreed. The average percentage of disagreement in this summary score was determined for rural as compared with urban practice location, type of practice, prior experience with the recommendations, physician assessment of their practicality, and physician demographics, using *t* tests and analysis of variance. Since 3-year family practice residencies have only been in existence since 1969, we anticipated that age and residency training status would be highly confounded. Therefore, to determine if lack of residency training and older age were independently associated with disagreement, an analysis of variance was performed, using the alternate variable as a covariate.

Finally, in order to determine a set of predictors of greater disagreement with the recommendations, a backward elimination regression analysis was performed. We theorized that efforts to increase agreement with the USPSTF guidelines would be facilitated by knowing the demographic predictors of greater disagreement. In ad-

Table 1. Characteristics of the Intensive Follow-up Group and the Study Sample Excluding That Group*

Characteristics	Study Sample Excluding Intensive Follow-up Group, % (N = 806)	Intensive Follow-up Group, % (N = 92)	P Value
Sex, male	82	80	.78
Residency graduate	61	65	.48
Race, white	91	89	.68
Practice type			
Solo	38	29	.18
Group	42	42	
Other	20	30	
Community size <50,000	47	53	.22
Prior experience with USPSTF guidelines			
Never read	55	61	.71
Read some	45	39	
Direction of disagreement			
More should be done	62	52	.08
Less should be done	38	48	
Prevention orientation			
More than peers	90	88	.48
Mean percent disagreement with USPSTF guidelines	12	12	.83

*The mean age of the study sample was 45 years, the follow-up group, 44 years. $P = .49$. USPSTF denotes United States Preventive Services Task Force.

dition, knowing which physician attitudes toward preventive service delivery were predictive of greater disagreement would be helpful in understanding the process leading to agreement.

Results

Usable questionnaires were returned by 898 physicians, a 50% response rate. The study sample was demographically comparable to the membership of the Ohio Academy of Family Physicians in age, sex, and residency training. Of the 120 physicians randomly selected to receive personalized letters and follow-up telephone calls as part of an intensive follow-up group, 92 (77%) returned completed surveys. Nine physicians (8%) had retired or were not listed with the telephone company. Those unlisted physicians were presumed to have retired, moved, or died, and were therefore ineligible for the study. When these ineligible subjects are excluded from the denominator of the intensive follow-up sample, the response rate is 83%. Table 1 shows a comparison be-

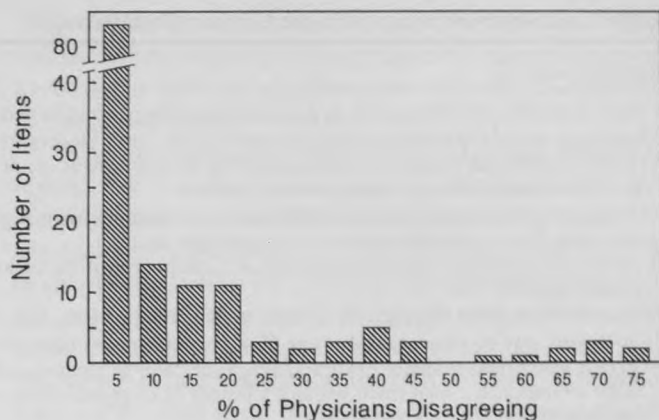


Figure 1. Number of recommendations made by the US Preventive Services Task Force with which varying percentages of physicians disagreed. Only 25 out of 150 recommendations were disagreed with by more than 20% of all physicians surveyed.

tween the characteristics of the intensive follow-up group and the rest of the study sample. The intensive follow-up group did not differ significantly from the rest of the respondents.

Overall, there was a high level of agreement with the recommendations of the Task Force. The average physician agreed with 88% of the items. For the majority of the recommendations, more than 95% of physicians agreed. The number of recommendations in each percentile category of physician disagreement is depicted in Figure 1.

Specific recommendations with relatively higher levels of disagreement were tabulated. Table 2 shows the items with which disagreement was more than two standard deviations above the mean level of 12%. The highest level of disagreement was found among cancer screening items. With respect to almost all of these recommendations, the Task Force recommended performing fewer services than have been recommended by the National Cancer Institute and the American Cancer Society,⁷ or stated that there was insufficient evidence to recommend a preventive intervention. In addition to cancer screening items, a high percentage of physicians disagreed with the USPSTF recommendations to limit the use of vision, hearing, and glaucoma screening, while a moderate number disagreed with null recommendations for screening for a wide variety of disorders. There was also a modest level of disagreement with certain recommendations for screening for asymptomatic disease. For only one counseling recommendation was there relatively high disagreement. This item related to counseling about tooth brushing, flossing, use of fluoride, and other preventive dental measures.

A set of analyses were designed to characterize phy-

Table 2. Recommendations with the Greatest Disagreement

Recommendation	% Disagreement
*There is insufficient evidence for or against counseling patients to perform self-examination of the testicles.	73
*Routine screening of asymptomatic persons for oral cancer by primary care clinicians is <i>not</i> recommended.	71
*There is insufficient evidence to recommend for or against fecal occult blood testing as an effective screening test for colorectal cancer in asymptomatic persons.	70
*There is insufficient evidence to recommend for or against routine digital rectal examinations as an effective screening test for prostate cancer in asymptomatic men.	70
Routine vision testing is <i>not</i> recommended as a component of the periodic health examination of asymptomatic school children.	67
*Currently there is no evidence for or against counseling patients to perform skin self-examination.	66
*Pap smears may be discontinued at age 65 if previous smears have consistently been normal.	61
*There is insufficient evidence of clinical benefit or harm to recommend for or against routine screening of other asymptomatic men (men without a history of cryptorchidism, orchiopexy, or testicular atrophy) for testicular cancer.	55
*There is insufficient evidence to recommend for or against sigmoidoscopy as an effective screening test for colorectal cancer in asymptomatic persons.	54
Screening of asymptomatic women for ovarian cancer is <i>not</i> recommended.	47
Electronic fetal monitoring should not be performed routinely on all women in labor.	41
Electronic fetal monitoring should be reserved for pregnancies at increased risk for fetal distress.	40
Vision screening of adolescents and adults is <i>not</i> recommended, but it may be appropriate in the elderly.	40
Periodic urine testing of asymptomatic persons is recommended only for those with diabetes mellitus and for pregnant women.	39
There is insufficient evidence to recommend routine performance of tonometry by primary care physicians as an effective screening test for glaucoma.	38
There is insufficient evidence of benefit to recommend for or against hearing screening of asymptomatic children beyond age 3.	38
There is insufficient evidence to recommend for or against auscultation for carotid bruits or noninvasive testing for carotid stenosis as effective screening strategies to prevent cerebrovascular disease in asymptomatic persons.	33
Routine screening for peripheral arterial disease in asymptomatic persons is <i>not</i> recommended.	33
*Mammography every one to two years is recommended for all women beginning at age 50 and concluding at approximately age 75 unless pathology has been detected.	33
Routine screening for diabetes in asymptomatic nonpregnant adult patients, using plasma glucose measurement or urinalysis, is <i>not</i> recommended for the general population, but it may be appropriate in selected high-risk groups.	31
Secondary prevention of CAD (screening) by performing routine electrocardiography to screen asymptomatic persons is <i>not</i> recommended.	26
An oral glucose tolerance test for gestational diabetes mellitus is recommended for all pregnant women between 24 and 28 weeks of gestation.	26
*Although the teaching of breast self-examination is not specially recommended at this time, there is insufficient evidence to recommend any change in current breast self-examination practices.	25
All infants and pregnant women should be tested for anemia.	25
All pregnant women should be tested for hepatitis B surface antigen at their first prenatal visit.	25
Maternal serum alpha-fetoprotein should be measured on all pregnant women during weeks 16–18 in locations that have adequate counseling and follow-up services.	24
Routine screening of asymptomatic persons (other than infants and pregnant women) for anemia is not recommended in the absence of clinical indications.	22
Routine screening for thyroid disorders is not warranted in asymptomatic adults or children.	21
Routine testing for <i>Chlamydia trachomatis</i> is recommended for asymptomatic persons at high risk of infection.	19
Routine screening interviews or examinations for evidence of violent injuries are <i>not</i> recommended.	19
Blood pressure should be measured regularly in all persons aged 3 and above.	18
Screening for cognitive impairment among asymptomatic persons is <i>not</i> recommended.	17
It may be clinically prudent to screen preschool children and persons aged 60 and older.	16
Screening for hearing impairment is <i>not</i> recommended for asymptomatic adolescents or adults unless exposed routinely to excessive noise.	16
Clinicians should obtain a complete sexual history from all adolescent and adult patients (to prevent unintended pregnancy).	16
Primary care clinicians should counsel patients regarding daily tooth brushing and dental flossing, the appropriate use of fluoride for caries prevention, avoiding sugary foods, and risk factors for developing baby bottle tooth decay.	15
Clinicians should take a complete sexual and drug use history on all adolescent and adult patients (to prevent HIV and other sexually transmitted diseases).	15
Ultrasound examination is <i>not</i> recommended as a routine screening test for congenital defects.	15

*USPSTF recommendation that differed from that of the American Cancer Society.⁷

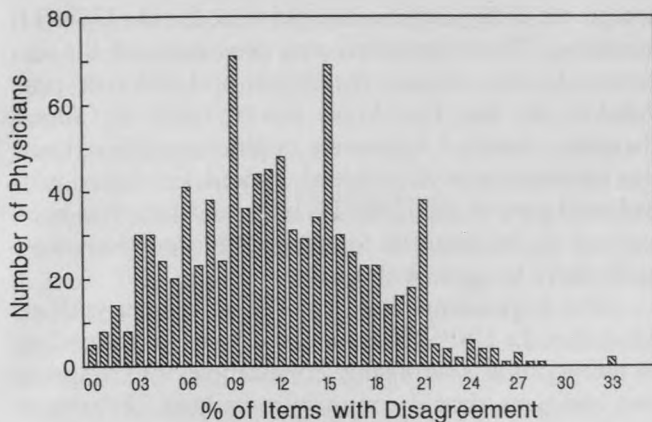


Figure 2. Distribution of physician disagreement with an average of 12% of the recommendations made by the US Preventive Services Task Force.

sicians with higher levels of disagreement with the Task Force recommendations. The average physician disagreed with 12% of the recommendations. Individual physicians disagreed with from zero to 33% of the items, as shown in Figure 2. Although men were significantly more likely than women to disagree with the Task Force recommendations ($P = .02$), the absolute magnitude of this difference was small (disagreement with 12% as compared with 11% of the recommendations). No association of race or community size with the average percentage of disagreement was found. Table 3 shows that the level of disagreement varied with the type of practice in which the physician was engaged ($P < .001$). Among categories with sufficient sample size to yield stable comparisons, the least disagreement was found among physicians engaged in full-time teaching, whereas being in group and solo practice were associated with increasing levels of disagreement. Post hoc t tests for differences between these three groups were all significant at $P <$

Table 3. Number of Physicians in Each Type of Practice and the Percentage of USPSTF Recommendations with Which They Disagreed

Type of Practice	No. of Physicians	Mean % Disagreement
Full-time teaching	75	8*
HMO employee	10	10
Urgent care	11	10
Group	379	11*
Solo	337	13*
Emergency	13	14
Other	68	10
Not practicing	5	15

*Differences between those in full-time teaching and group practice, between group practice and solo practice, and between solo practice and full-time teaching were all significant ($P < .001$) as determined by Student's t test. USPSTF denotes the United States Preventive Services Task Force; HMO denotes health maintenance organization.

.001. Older physicians and those who did not have residency training were independently more likely to have higher levels of disagreement with the Task Force recommendations ($P < .001$).

The more exposure physicians had to the USPSTF report, the less likely they were to disagree with the recommendations. Physicians who had never heard of the Task Force guidelines ($n = 353$) disagreed with 13% of them. Those who had heard of the guidelines but had not read them ($n = 142$) disagreed with 12% of the recommendations, whereas those who had read the guidelines in a secondary source ($n = 260$) disagreed with 11%. The least disagreement was among those physicians who had read at least part of the actual USPSTF report; these physicians disagreed with only 8% of the items. In analyses of variance, both linear and quadratic trends for greater agreement with increasing exposure to the recommendations were statistically significant ($P < .001$).

We asked the physicians: "Overall, how practical do you think the Task Force's guidelines are for implementing in your practice?" There was a statistically significant linear trend toward greater disagreement with the guidelines as the perceived measure of practicality declined. Physicians who believed the guidelines were "very practical" disagreed with 10% of the recommendations, whereas those who thought they were impractical or very impractical disagreed with 13% ($P < .001$).

Ninety percent of respondents perceived themselves as being more prevention oriented than other family physicians. Physicians who classified themselves as less prevention oriented disagreed with slightly more recommendations (13%) than those who thought they were more prevention oriented (mean disagreement with 12% of the recommendations [$P = .02$]).

Physicians were asked whether they generally thought that fewer or more preventive services should be performed for items with which they disagreed. Physicians who thought that fewer services than recommended should be performed ($n = 297$) disagreed with an average of 13% of the recommendations, whereas physicians who felt that more services should be offered ($n = 464$) disagreed with 11% of the items ($P = .005$).

To determine the independent predictors of disagreement with the Task Force recommendations, a model was tested using stepwise regression. Eligible predictor variables included the demographic factors of age, sex, race (categorized as white and nonwhite), residency training, community size, and solo vs other practice arrangement. Eligible predictor variables reflecting physician attitudes toward preventive service delivery were assessed with the questions about physician prior exposure to the Task Force guidelines, assessment of the

practicality of the guidelines for implementation, physician self-assessment of preventive orientation compared to other family physicians, and physician report of the direction of their disagreement toward more or fewer preventive services. Of these variables, age ($P < .001$), being in solo practice ($P < .001$), less prior exposure to the USPSTF guidelines ($P < .0001$), and physician assessment of guideline impracticality ($P < .0001$) were independently associated with greater disagreement (accounting for 15% of the explained variance).

Discussion

As far as we are aware, this is the first large study to assess the level of agreement of physicians with the USPSTF guidelines. The 50% response rate was anticipated for a 12-page survey of busy practicing physicians. A unique aspect of this study, however, was the use of an intensive follow-up of a random sample of the population to assess the possibility of selection bias. The results of this assessment confirmed that the study findings were based on a representative sample of practicing family physicians in Ohio. In addition, family physicians in the state represent a broad cross-section of primary care physicians, practicing in both rural and urban sites and in a variety of practice settings. Ohio family physicians are similar to members of the American Academy of Family Physicians (AAFP) in mean age (46 years and 45 years, respectively), sex (15% female), percentage who are residency trained (57% and 58%, respectively), percentage who are in rural practice locations (22% and 27%, respectively), and percentage in solo practice (45% and 41%, respectively) (AAFP membership data, Oct, 1990). While the findings presented are thus likely to be representative of United States family physicians, physicians in other specialties might respond differently.

Family physician agreement with the USPSTF recommendations is particularly important in translating the guidelines into practice. The high overall level of agreement suggests that the Task Force's recommendations provide a good starting point for building a consensus about what specific preventive services primary care physicians should provide. Although there are many intervening variables between agreeing with a set of recommendations and the actual delivery of preventive services, primary care physician agreement with the guidelines is an important first step in delivering these services to patients.

In general, physicians in our sample believed that more preventive services should be performed than were recommended by the Task Force. Their disagreement in this respect could represent a lack of exposure to or

acceptance of the conservative rationale for the USPSTF guidelines. The respondents were provided with the recommendations without the details and rationale provided in the full Task Force report, *Guide to Clinical Preventive Services*.¹ Responses might have differed had this information been provided. Indeed, physicians who had read part of the USPSTF book and had thus been exposed to the rationale for the recommendations were more likely to agree with them.

The respondents' high level of agreement with almost all of the USPSTF recommendations for counseling by physicians was surprising. For example, 99.7% agreed that clinicians should routinely investigate "behavioral risk factors such as tobacco use, dietary fat and cholesterol intake, and inadequate physical activity" in order to screen for asymptomatic coronary artery disease. Physicians agreed that (1) "tobacco cessation counseling should be offered on a regular basis" to all users of tobacco (98.6%); (2) "clinicians should counsel all patients to engage in a program of regular physical activity" (99.1%); (3) "clinicians should provide periodic counseling regarding dietary intake of calories, fat, cholesterol, complex carbohydrates, fiber, and sodium" (95.4%); and (4) "all patients should be urged to use occupant restraints [seat belts] for themselves and others" (98.9%). While the sentiments expressed by the respondents are laudable and are somewhat higher than the rates of self-reported counseling *behavior* by physicians,^{3,25} there are many obstacles to this type of health promotion by physicians. These include lack of time and training,³ and poor reimbursement by patients and third parties for these services.²⁶ Physicians may believe that these counseling interventions should be offered, but may not see themselves as capable of,³ or responsible for, providing them.

There are many possible interpretations of the reasons for lower levels of agreement with specific recommendations. While our survey made no mention of other expert guidelines, it is striking that for most of the recommendations in which the Task Force differed with the American Cancer Society (ACS), over one half of the responding family physicians disagreed with the Task Force. Previous work²⁷ has shown a relatively high level of agreement with the ACS guidelines among family physicians. This agreement may be largely attributed to the length of time the ACS has been publicizing their guidelines to physicians and to the public; the USPSTF guidelines are more recent. Indeed, 39% of the practicing physicians who responded to the survey had not even heard of the Task Force recommendations. The high level of disagreement with guidelines discordant with the ACS recommendations may be attributed in part to the differing rationale and methodologies employed by the

two expert bodies. The American Cancer Society recommendations stem from a desire to do everything that is practical for the primary and secondary prevention of cancer. The USPSTF recognized, however, that only a small percentage of the potentially available preventive services are currently being delivered, and therefore recommended that only preventive services for which there was strong scientific evidence of effectiveness be performed. This approach led to a finding of insufficient evidence to recommend the performance of a number of commonly recommended preventive interventions. In addition, the Task Force used different standards from those of the ACS in judging the quality of the scientific evidence for the efficacy and impact of interventions, and included a greater emphasis on the potentially negative consequences of attempting to deliver preventive services.

Our data do not allow us to provide an in-depth explanation of the reasons for disagreement with specific guidelines. For example, do one third of physicians disagree with the USPSTF recommendation to perform screening mammography every 1 to 2 years in women aged 50 to 75 years because they believe that screening should begin earlier, continue in later years, be performed at a different time interval, or not be performed at all? Having identified recommendations with high levels of disagreement, future work that focuses on the reasons for this disagreement will be important to facilitate consensus development and, subsequently, to foster increased preventive service delivery. There is also a great need for additional study to improve the scientific basis for many of these more controversial recommendations.

The clinical experience of the responding practicing physicians must not be discounted. It is likely that some of the disagreement expressed by physicians represents their assessment that the guidelines are not feasible in their current practice settings, are not seen as part of the domain of the practice of medicine, or are less important than many of the more compelling reasons for which patients visit their primary care physicians. While those making practice recommendations might benefit from greater input from practicing physicians, it is equally likely that preventive service delivery would be enhanced by the diffusion of the rationale and the specific recommendations of the USPSTF. Additional work will be required to update²⁸ and to disseminate the guidelines among practicing physicians, if the recommendations are to have an impact on practice. Future work that emphasizes the practical integration of guidelines into the realities of clinical practice will be necessary to ensure the maximum impact of the USPSTF recommendations.

Recent changes in the recommendations of expert groups show increased concordance in rationale, meth-

odology, and conclusions.²² To the extent that an open discussion of the differences in recommendations made by various expert groups²⁹ leads to an increased understanding of disease prevention, these differences are a sign of the vitality of the field of clinical preventive medicine. The USPSTF did in fact solicit and receive input from representatives of the National Cancer Institute and other expert bodies, and, because of its different approach and more global focus, arrived at somewhat different recommendations. A universal consensus cannot be forced and would potentially lead to physicians treating recommendations as dogma rather than as evolving guidelines. Nevertheless, since varying guidelines create confusion among the public and physicians, and may be a barrier to preventive service delivery, every effort should be made to resolve trivial differences and to explain the rationale behind areas of major disagreement.

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