



Evaluation of the U.S. Preventive Services Task Force Recommendations for Clinical Preventive Services

Final Report

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EXECUTIVE SUMMARY

The Agency for Health Care Research and Quality (AHRQ) contracted with NORC at the University of Chicago to study the implementation of the U.S. Preventive Services Task Force (USPSTF) recommendations for clinical preventive services in a closed-panel health plan, open-panel health plan, hybrid health plan having both open- and closed-panel characteristics, and governmental health plan. The four health plan site selections serve to address AHRQ's interest in the adoption and integration of the USPSTF recommendations at the health plan level. This final report represents an analysis of qualitative interviews, prevention materials provided by sites, and other published literature. Overall, we report on findings from over 40 discussions with respondents from four different health plans. Our findings address the adoption, integration, delivery, and dissemination of the USPSTF recommendations in different types of health plans. We also describe the challenges faced by both health plan leadership and staff members in adopting, integrating, and delivering the USPSTF recommendations, and offer suggestions for improving dissemination of the recommendations.

IMPORTANCE OF THE CURRENT STUDY

In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. Although there is existing research regarding implementation and use of USPSTF recommendations at the individual clinician and group practice levels, there has been little research at the health plan level. On behalf of AHRQ, NORC had previously conducted an assessment of the use of USPSTF recommendations among community-based health care practices and found that physicians consider the recommendations valuable, but sometimes inconsistent with their local standard of care. Research has highlighted the need for examining the use of the USPSTF recommendations at the health plan (payer) level, which may be more effective in impacting usage at the physician level. Findings from this study offer unique insights into how the USPSTF recommendations are integrated into different types of health plans, and offers suggestions for improving dissemination of the recommendations.

STUDY METHODS

Project activities were conducted using a tiered-qualitative approach divided into three separate but interrelated phases: 1) literature review and evaluation design; 2) semi-structured phone and in-person interviews; and 3) final analysis, including five thematic overviews focused on key cross-cutting themes related to the adoption, integration, and delivery of the USPSTF recommendations in health plans.

The evaluation design involved a review of the published and unpublished literature and the development of three key research questions to be explored further through qualitative methods. The three research questions are: 1) To what extent are clinical preventive services integrated into the four selected health care delivery systems? 2) What deficiencies exist in the delivery of clinical preventive services by these health care systems? and 3) How can AHRQ contribute to the increased implementation of USPSTF recommendations among health care delivery systems? The evaluation design provided the foundation for subsequent project activities, including the selection of the health plan sites.

The second major phase of the study involved in-depth semi-structured telephone and in-person interviews with staff from four health plans. To explore the adoption, integration, delivery, and dissemination of the USPSTF recommendations, NORC interviewed a total of 42 health plan staff

members from four health plans across the U.S. Selected in concert with AHRQ, the health plans were chosen based on their operational mix (e.g., open-panel plan, closed-panel plan, hybrid plan, and governmental plan) and willingness to participate in the study. Specifically, each health plan has different types of relationships with providers based upon employment versus contracting. We hypothesized that the structure of the health plan may impact the integration of the USPSTF recommendations and the ability of the plans to deliver the recommendations.

After participation was secured, NORC worked with the Medical Director and site contact to secure study participants. NORC specifically asked to interview individuals in several different kinds of positions, including Medical Directors, Directors of Quality Improvement, Directors of Health Information Technology (IT), Clinical Advisors,¹ Quality Improvement Staff, and Health IT Staff. NORC developed an interview guide that is organized into modules reflecting the perspective of the particular respondent type (e.g. Medical Director, Director of Quality Improvement, Quality Improvement Staff, Director of Health IT, Health IT Staff, and Clinical Advisor). Given the different types of health plans and differences in the range of activities involved in the delivery of clinical preventive services, NORC peppered the interview guide with additional follow-up questions, when appropriate, that focused on topics or issues that were directly relevant to each health plan.

The interviews covered a range of topics that are important to the delivery and integration of the USPSTF recommendations. We asked individual respondents about their familiarity with the USPSTF recommendations, the adoption, integration, and delivery of the USPSTF recommendations in their health plans, challenges or barriers they face, and specific ways that AHRQ can improve the dissemination of the USPSTF recommendations to increase adoption rates at the systems-level. Prior to the interviews, NORC reviewed relevant prevention materials provided by each of the four health plans sites, and prepared a review of the literature on the USPSTF and its impact on the delivery of clinical preventive services.

Analysis activities, which culminated in the final report, drew from findings and themes across all project activities. NORC also developed five thematic overviews to further explore key cross-cutting themes related to the adoption, integration, and delivery of the USPSTF recommendations in health plans.

BACKGROUND

The USPSTF provides clinicians with a valuable service, gathering and analyzing the available literature on preventive medicine and transforming it into sound evidence-based recommendations. Yet, despite the value and ease of attaining the USPSTF recommendations, patients are not receiving the recommended amount of preventive services. The literature shows that while physician time and the inability to prioritize recommendations are perhaps the greatest challenges to the delivery of clinical preventive services; additional factors such as implementation systems, quality improvement strategies, and the type of system in which patients seek care may also affect the rates of service delivery. Although there is existing research regarding implementation and use of USPSTF recommendations at the individual clinician and group practice levels, there has been little research at the health plan level.

¹ For the purposes of this study, Clinical Advisors are primary care physicians or specialty care providers, who also serve in a leadership or broader prevention role at their health plan.

FINDINGS

Findings are discussed in three areas: 1) the adoption of the USPSTF recommendations, including familiarity with the recommendations, and the process of accessing, adopting and integrating the recommendations; 2) the integration and delivery of the USPSTF recommendations, including incorporating the recommendations into practice, major uses of health IT and quality improvement, the impact of reimbursement structures and other factors, and barriers to integration and delivery of the recommendations; and 3) improving dissemination of the USPSTF recommendations in health care systems.

I. Adoption of the USPSTF Recommendations in Health Plans

Familiarity with the USPSTF Recommendations

The synthesis of findings begins with the adoption of the USPSTF recommendations in health plans. We discuss respondents' familiarity with the recommendations, the methodology underlying the recommendations, and the USPSTF recommendation grading system. Overall, we found that the respondents were familiar with the USPSTF recommendations. However, reported familiarity varied dramatically. The majority of respondents indicated that they are "somewhat" or "fairly" familiar with the recommendations. Many respondents indicated that they have heard of the USPSTF recommendations, but do not know them well enough to cite specific examples. A few respondents indicated that they had not heard of the USPSTF recommendations at all prior to our interview. Our conversations indicate that most respondents were unfamiliar with the USPSTF's methodology. Many respondents were not aware that AHRQ disseminates a line of tools and products that incorporate the USPSTF recommendations, such as the *Put Prevention into Practice* materials, the *Electronic Preventive Services Selector*, a pocket manual of recommendations, and email updates.

Process for Adopting the USPSTF Recommendations

Each health plan has its own unique process for adopting clinical preventive services recommendations from the USPSTF and other sources. The closed-panel plan and governmental plan comply with guidelines for clinical preventive services issued by their respective systems-level or national headquarters. However, the degree of compliance with these nationally-determined guidelines – and relative autonomy to deviate – differs dramatically. In the open-panel and hybrid plans, the process of adopting the recommendations occurs at the plan level only. The importance of provider involvement in developing the guidelines is also a key finding across all four health plans.

The USPSTF recommendations play an important role in the process that health plans use to develop and adopt their own recommendations or policies for clinical preventive services. The health plans consult the USPSTF during their process of reviewing and adopting clinical preventive services recommendations. Expert opinion and group consensus decision-making are two other influences that impact the process used to select recommendations.

Accessing the USPSTF Recommendations

Few people regularly check for updated recommendations from the USPSTF. In fact, less than one quarter of respondents indicated that they regularly check for updated evidence and recommendations from the Task Force. Directors of Quality Improvement were most likely to check for updated evidence and recommendations from the Task Force. However, approximately 52% of participants indicated that they do *not* check for updated evidence.

The Director of Quality Improvement and Quality Improvement Department, more generally, were cited most often as the primary target audience of the recommendations followed by clinicians, the Medical Director, and finally, plan leadership at the systems-level or central office headquarters.

II. Integration and Delivery of the USPSTF Recommendations in Health Plans

Incorporating the USPSTF Recommendations into Practice

Each of the health plans delivers some of the USPSTF's "A" and "B" recommendations. None of the four plans systematically deliver all of the USPSTF recommendations. Many of the respondents were unfamiliar with which clinical preventive services recommendations are "A" and "B" recommendations. Others did not recognize the USPSTF grading scheme at all. As a result, these respondents had difficulty commenting on the delivery of the "A" and "B" recommendations in their health plans. In addition, another notable finding is that respondents indicated that some of the "A" and "B" recommendations are being delivered across health plans, but not due to the fact that they are highly recommended by the USPSTF. Rather, the recommendations are being systematically delivered because they coincide with Health Plan Employer Data and Information Set (HEDIS) specifications.

The USPSTF recommendations are integrated in health plan provider manuals on clinical preventive services, performance measures, or other publications. USPSTF recommendations are integrated electronically using health information technology tools such as electronic medical records (EMRs), clinical reminders, and order sets for clinicians. The USPSTF recommendations are incorporated into the plan's patient health education materials that are distributed to the member population.

Major Uses of Health Information Technology

Health IT plays a key role in the integration and delivery of clinical preventive services recommendations. Clinical decision support systems in health plans are highly relevant to the implementation of clinical preventive services recommendations. Health plans use EMRs, clinical reminders, and other health information technology tools such as order sets to not only integrate and deliver the USPSTF recommendations, but also track and monitor data for quality improvement purposes. Each of the health plans use health IT to integrate the USPSTF recommendations though their sophistication varies considerably. Governmental and closed-panel systems, where providers are employees of the plan, had the greatest integration of Task Force recommendations using health IT, followed by the hybrid system (in which approximately half of plan members access services through plan-affiliated providers and half through contracted providers). Finally, the open-panel system, which allows private physicians to contract with multiple health plans, had the least integration of the Task Force recommendations using health IT.

Major Uses of Quality Improvement

Quality improvement activities are employed at each of the health plans to increase the appropriate delivery of clinical preventive services. Health plans utilize health IT to measure and monitor the delivery of clinical preventive services for quality improvement purposes. However, respondents from all of the plans described that using data for quality improvement purposes can be challenging for a variety of reasons. Health plans noted a variety of barriers including claims lag, coding detail, unprocessed claims, inaccurate coding, and incomplete patient records.

Health plans have implemented quality improvement activities to increase the delivery of screenings for colorectal cancer, cervical cancer, and breast cancer, and improve the delivery of tobacco cessation counseling and flu immunizations. Many of the quality improvement techniques integrate health information technology. Specific quality improvement activities focused on improving

delivery rates of clinical preventive services including provider report cards, internal work groups, monitoring and compliance, external programs and campaigns, patient education and outreach, barrier analysis, member satisfaction surveys, and practice patterns analysis. Respondents also described strategies used to encourage the implementation of quality improvement activities at the practice or clinician level including provider education and rewards.

The Impact of the Reimbursement Structure on the Delivery of Clinical Preventive Services

We found that the majority of the health plans utilize the reimbursement structure to reward the delivery of clinical preventive services – but to varying degrees. In the case of the hybrid plan and the governmental plan, individual physicians are financially rewarded for performing well on certain measures related to clinical preventive services. These plans indicated that their reimbursement structures have a “pay-for-performance” component, whereby financial incentives for medical teams and physicians are tied to health care quality. The open-panel plan is currently developing a pay-for-performance component for preventive health. The closed-panel plan rewards its medical teams based on performance, but does not financially reward individual physicians.

The Role of HEDIS in the Delivery of Clinical Preventive Services

For the past decade, the Health Plan Employer Data and Information Set (HEDIS) has been used to evaluate the quality of outpatient care in many large managed health care plans. Respondents occasionally confused the USPSTF recommendations and HEDIS measures. Only a handful of the respondents actually make a distinction between the USPSTF recommendations and HEDIS measures. Respondents across health plans conveyed that HEDIS strongly influences which clinical preventive services are provided and how frequently services are tracked and measured. It appears that the delivery of the USPSTF recommendations associated with HEDIS measures is evaluated and tracked more frequently than the delivery of the USPSTF recommendations that are not associated with HEDIS measures.

Perceptions of the USPSTF Recommendations

Health plan leadership and staff provided positive feedback on the USPSTF recommendations. The majority of respondents found that the USPSTF recommendations are packaged in a user-friendly way. Respondents described that the recommendations are “thorough,” “easy to read,” and “very easy to follow.” Several respondents felt that AHRQ could improve upon the packaging of the USPSTF recommendations. Overall, the majority of Quality Improvement Directors, Quality Improvement staff, and Medical Directors were interested in learning more about the process behind the USPSTF recommendations.

Respondents indicated that the Task Force’s prevention priorities aligned with other systems-level variables such as payer expectations, industry quality indicators, and consumer demand. A few respondents commented that prevention priorities are aligned with payer expectations and quality indicators, however, responses varied on the degree of alignment with these variables. Many respondents believe that the USPSTF’s prevention priorities are not aligned well with consumer demand, citing that consumers have priorities and agendas that are not necessarily aligned with prevention. The majority of respondents indicated that they did not know whether the Task Force’s prevention priorities are aligned with other state or Federal initiatives because they did not have a strong sense of the national and state priorities.

Barriers to the Adoption, Integration, and Delivery of the USPSTF Recommendations

Health plans faced a number of common barriers with regard to adopting, integrating, and delivering the USPSTF recommendations including: patient resistance, staff availability, barriers to the delivery of counseling recommendations, barriers to the integration of certain types of USPSTF recommendations, availability of clinical preventive services in the system, geographic barriers to care, information technology barriers, process barriers, lack of local control over the recommendations, and other barriers. These challenges are not due to fundamental issues with the USPSTF recommendations, but rather the result of larger systems-level challenges that health plans face with respect to adopting and integrating clinical preventive services recommendations. Many of these barriers were not unique to one particular health plan, but were recognized by respondents across plans.

III. Improving Dissemination of the USPSTF Recommendations in Health Plans

Improving the Utility of the Recommendations

Suggestions for improving the utility of the recommendations ranged from disseminating more information about the Task Force’s methodology to certain members of the health plan staff to developing new prevention tools specifically designed for nurses delivering counseling recommendations. Other key suggestions include: creating procedure codes or performance measures that coincide with the USPSTF recommendations in order to ease the process of integration; providing cost information about preventive services and programs; providing more information about how decision-making should occur for people who are slightly outside of the recommendation’s age limit; disseminating full paper copies of the recommendations; and developing new patient level prevention tools.

AHRQ’s Role in Improving the Dissemination of the Task Force Recommendations

Respondents indicated that AHRQ could play a key role in improving the dissemination of the Task Force recommendations and methodology. First, many respondents indicated that it would be useful if AHRQ could do more to disseminate the Task Force recommendations. Respondents suggested that AHRQ could attend provider professional meetings and present on a few of the Task Force recommendations. A number of respondents also indicated that AHRQ should disseminate more information about the Task Force’s methodology for selecting and grading recommendations.

THEMATIC OVERVIEWS

NORC prepared five stand-alone thematic overviews which explore several key cross-cutting themes related to the adoption, integration, delivery, and dissemination of the USPSTF recommendations.

1. The Impact of Pay-for-Performance on the Delivery of the USPSTF Recommendations
2. The Role of Health IT in the Integration and Delivery of the USPSTF Recommendations
3. Systems-Level Changes to Encourage the Delivery of the USPSTF Recommendations
4. Delivering the USPSTF Recommendations in a Rural Health Care Setting
5. The Impact of Health Plan Structures on the Delivery and Integration of the USPSTF Recommendations

Each overview presents best practices or key findings across the four health plans. Data from qualitative interviews with health plan respondents, expert interviews, and relevant reports and scholarly literature were used to produce the overviews.

CONCLUSIONS

From the health plans' experiences, we compiled our key findings and lessons learned to inform the AHRQ Prevention Team; the USPSTF; researchers and policymakers; and health plan administrators, clinicians, and other implementers of clinical preventive health services recommendations. We synthesize our lessons learned, suggest next steps for AHRQ, and present areas for future research and analysis.

Lessons Learned

Our lessons learned are presented in four key areas. The first key area discusses the impact of health plan structures on the integration of the USPSTF recommendations.

The remaining areas focus on our study findings in relation to three evaluation research questions, which have guided the development and direction of the study: 1) To what extent are clinical preventive services integrated into the four selected health care delivery systems? 2) What deficiencies exist in the delivery of clinical preventive services by these health care systems? 3) How can AHRQ contribute to the increased implementation of USPSTF recommendations among health care delivery systems? Overall, lessons learned include:

1. Health plan structures impact the integration and delivery of the USPSTF recommendations.

Different health plan models were selected to explore whether health plan structure has an impact on the integration and delivery of the USPSTF recommendations. We found that health plan structure clearly impacts a number of variables related to the integration and delivery of the USPSTF recommendations, including health information technology, quality improvement, the process for adopting recommendations, and provider incentives.

2. Clinical preventive services, and specifically the USPSTF recommendations, are integrated into all four selected health plans.

The USPSTF recommendations for clinical preventive services are being integrated into each of the four health plans, though the degree of integration varies across plans. While it is more difficult to track whether the USPSTF recommendations are being delivered, our conversations with respondents indicate that the perception is that the "A" and "B" recommendations are a high priority at each of the plans. The USPSTF recommendations play an important role in the process that health plans use to develop and adopt their own recommendations or policies for clinical preventive services.

3. Health plans face common challenges with respect to the delivery of clinical preventive services.

Health plans face a number of common challenges and barriers with regard to adopting, integrating, and delivering the USPSTF recommendations, and recommendations for clinical preventive services, more generally. Common challenges include: time constraints; patient resistance; staff availability; availability of clinical preventive services in some practice settings; geographic barriers to care; IT barriers; process-related barriers; and difficulties associated with adopting and integrating counseling recommendations.

4. AHRQ can contribute to the increased implementation of USPSTF recommendations within health plans.

AHRQ can play a key role in improving the implementation of the USPSTF recommendations by (1) disseminating the recommendations and the USPSTF's methodology to health plan staff such as Directors of Quality Improvement, and (2) improving the dissemination of the line of tools and products that incorporate the USPSTF recommendations, such as the *Put Prevention into Practice* materials, the *Electronic Preventive Services Selector*, the pocket manual of recommendations, and email updates.

Next Steps for AHRQ

Finally, our recommendations for AHRQ's next steps include:

- ***Enhance the visibility of the USPSTF and its recommendations.*** Our interviews demonstrated that health plan leadership is not aware of different strategies that AHRQ uses to disseminate its USPSTF tools and products to consumers. In order to improve the adoption and integration of the USPSTF recommendations, AHRQ should take steps towards improving the visibility of both the USPSTF and its recommendations for clinical preventive services. AHRQ should also consider presenting the role of the USPSTF recommendations at professional health research and policy conferences that reach a broader health care audience. AHRQ could sponsor a membership organization for USPSTF users, which would foster a unique and productive opportunity for dialogue about the USPSTF recommendations. Possible activities for the membership organization include a USPSTF membership conference which would foster dialogue about important and timely issues related to clinical preventive services recommendations.
- ***Create new USPSTF products and publicize existing ones.*** Given respondents' desire to learn more about the methodology that the USPSTF uses to select and prioritize its recommendations, we propose that AHRQ develop a small brochure about the USPSTF's methodology for distribution across health plans. We also propose that AHRQ further disseminate and publicize the availability of its prevention tools and the opportunity to join the USPSTF listserv online.
- ***Work more closely with health plan leadership.*** Respondents recommended that AHRQ work more closely with their health plan leadership, such as the Medical Directors and Directors of Quality Improvement. Specifically, respondents suggested that AHRQ and the USPSTF develop collaborative relationships with their health plans, similar to the existing partnerships that plans form with other professional organizations that issue clinical preventive services recommendations.
- ***Educate consumers about the USPSTF recommendations and prevention.*** Several respondents indicated the importance of educating consumers about the USPSTF recommendations. Respondents suggested that the USPSTF include its recommendations on popular web news services such as WebMD, which provides timely health information and tools for health management.

Key Issues for Future Study

This study has elucidated important lessons learned for the adoption, integration and delivery of the USPSTF recommendations in different types of health plans. We identify four key areas that merit further investigation to assist AHRQ in moving forward.

- *The integration of the USPSTF recommendations in hybrid plans.* Future studies should explore whether the mixed-model structure underlying hybrid health plans offers unique incentives for providers to integrate and deliver the USPSTF recommendations for clinical preventive services.
- *Use of hybrid plans as ideal study sites to investigate the impact of plan structure on the USPSTF recommendations.* Hybrid plans are the ideal study sites to investigate the impact of plan structure on the USPSTF recommendations because their mixed-model nature allows for a comparison of the key variables of open and closed-panel health plans while also controlling for systems-level differences. Future research in hybrid plans has the potential to identify new directions and interventions to increase the integration and delivery of USPSTF recommendations across all types of health plans. Studies could compare the implementation and integration of the USPSTF recommendations in hybrid plans between plan-affiliated and contracted providers. More broadly, as health plan structures continue to evolve, research focused on hybrid plans offers an opportunity to explore preventive service delivery within both traditional and emerging health plan structures.
- *Health plan use of the USPSTF recommendations during times of change and controversy.* Our findings suggest that health plans strategically consult the USPSTF recommendations during times of change (e.g. clinical preventive services recommendations evolve for new diseases and conditions, such as obesity) and controversy (e.g. new science prompts the USPSTF and other organizations to revisit current recommendations for clinical preventive services). Further research should explore whether health plans do, in fact, consult the USPSTF recommendations in a strategic manner, and consequently, how AHRQ can improve the dissemination and visibility of the USPSTF recommendations during climates of change and controversy to improve their potential for adoption and delivery in health plans.
- *Competing recommendations for clinical preventive services.* Further research will be necessary to understand why certain specialty organizations are referenced for different types of clinical services, and whether there are trends across different types of health plans.
- *Why are certain “A” and “B” USPSTF recommendations consulted more than others?* Further research should explore why some of the “A” and “B” USPSTF recommendations are rarely consulted. One possible way to explore this issue would be to create a detailed matrix of the clinical preventive services recommendations for different types of health plans, and identify the roots of the recommendations (e.g., the USPSTF, American Cancer Society, etc). Conducting a small number of follow-up interviews with the plans to discuss the trends identified in the matrix would reveal why the “A” and “B” USPSTF recommendations are being implemented for certain clinical conditions and not others.
- *The functions of a USPSTF membership organization for health plans.* In order to increase the visibility of the USPSTF and its recommendations, it may be beneficial to establish a membership organization that would foster a regular dialogue about the USPSTF recommendations amongst health plan staff. Future research should explore the possible functions of a USPSTF membership organization, including its construction, activities, and potential to facilitate improvements in the dissemination and delivery of the USPSTF recommendations in health plans.

I. INTRODUCTION

NORC at the University of Chicago (NORC) is pleased to present this Final Report, *Evaluation of the U.S. Preventive Services Task Force Recommendations for Clinical Preventive Services*, to the Agency for Health Care Research and Quality (AHRQ) at the United States Department of Health and Human Services (HHS). This project applies qualitative methods to describe the implementation of the U.S. Preventive Services Task Force (USPSTF) recommendations for clinical preventive services in a closed-panel health plan, open-panel health plan, hybrid health plan having both open- and closed-panel characteristics, and governmental health plan. The four health plan site selections serve to address AHRQ's interest in the adoption and integration of the USPSTF recommendations at the systems-level. This report represents a synthesis of qualitative interviews, prevention materials provided by sites, and other published literature. Overall, we report on findings from over 40 discussions with respondents from four different health plans. Our findings address the adoption, integration, delivery, and dissemination of the USPSTF recommendations in different types of health plans. We also highlight the barriers to integration and delivery of the recommendations and offer suggestions for improving the dissemination of the recommendations.

Importance of the Current Study

In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence (including individual studies such as randomized controlled trials), costs, and potential benefits and harms. Recommendations are issued specific to conditions of public health significance that can be addressed through preventive strategies. Recommendations are categorized on a scale from “A” (strongly recommended) to “D” (not recommended), with an additional “I” category for prevention activities where evidence is insufficient. This allows clinicians to quickly assess the evidence behind a prevention strategy without needing to conduct extensive research. A great deal of research goes into the compilation of the USPSTF recommendations.

Despite the importance of the USPSTF recommendations and the widespread availability of the USPSTF recommendations, case studies, physician and patient surveys, chart reviews, and observational studies provide evidence that patients are not consistently receiving recommended preventive services.^{1,2,3,4,5,6,7} Several barriers hinder the implementation of the USPSTF recommendations such as a lack of physician time, patient attitudes and expectations, lack of implementation tools, physician attitudes, and financial disincentives.⁸

Although there is existing research on the implementation and use of USPSTF recommendations at the individual clinician and group practice levels, there has been little research at the health plan level. On behalf of AHRQ, NORC had previously conducted an assessment of the use of USPSTF recommendations among community-based health care practices and found that physicians consider the recommendations valuable, but sometimes inconsistent with their local standard of care. This finding highlights the need for examining the use of the USPSTF recommendations at the health plan (payer) level, which may be more effective in impacting usage at the physician level.

This project provides the Task Force with important insights about the level of integration of the USPSTF recommendations in different types of health plans. By presenting the perspectives of health plan staff from a closed-panel, open-panel, governmental, and hybrid health plan, this study offers unique insights into how the USPSTF recommendations are integrated into different types of health plans. Through this report, we intend to present the multi-faceted challenges that health plans face in adopting and delivering the USPSTF recommendations, and offer suggestions for improving dissemination of the recommendations.

Structure of the Report

NORC's overall approach to this evaluation is described in Section II: Study Methods. Section III provides background information, including a review of the relevant literature on the USPSTF and clinical preventive services.

Section IV presents a detailed discussion of the study findings, exploring the research questions posed in the evaluation design. The findings are organized according to three broad areas. The first, "Adoption of the USPSTF Recommendations in Health Plans," explores respondents' familiarity with the USPSTF recommendations for clinical preventive services and the tools and products it produces, as well as the process by which the health plans review, adopt, and integrate clinical preventive services recommendations. The second, "Integration and Delivery of the USPSTF Recommendations in Health Plans," reports on the bulk of the systems-level characteristics related to clinical preventive service delivery across the health plans, including: the integration of recommendations into practice, the use of health information technology, the use of quality improvement strategies, the impact of reimbursement and performance measurement, perceptions of the USPSTF recommendations, as well as a section on barriers to adoption and integration of recommendations. Finally, the third area, "Improving Dissemination of the USPSTF Recommendations in Health Plans," contains suggestions for improving the utility of the recommendations and for tools and methods that AHRQ could employ to improve the dissemination of the USPSTF recommendations.

While a detailed discussion of the findings is provided in Section IV, Section V takes the evaluation findings a step further by exploring several of the most interesting and important cross-cutting themes. Specifically, this section presents five thematic overviews that analyze themes related to the adoption, integration and delivery, and dissemination of the USPSTF recommendations. Each thematic overview explores a single theme, synthesizing published and unpublished literature and the interviews to present top-level conclusions and to suggest areas for further research. The thematic overviews include: the impact of pay-for-performance; the role of health information technology; the need for systems changes in health plans; the impact of health plan structures; and the challenges associated with delivering the USPSTF recommendations in a rural health care setting. Finally, Section VI presents overall lessons learned, suggested next steps, and key issues for future study.

II. STUDY METHODS

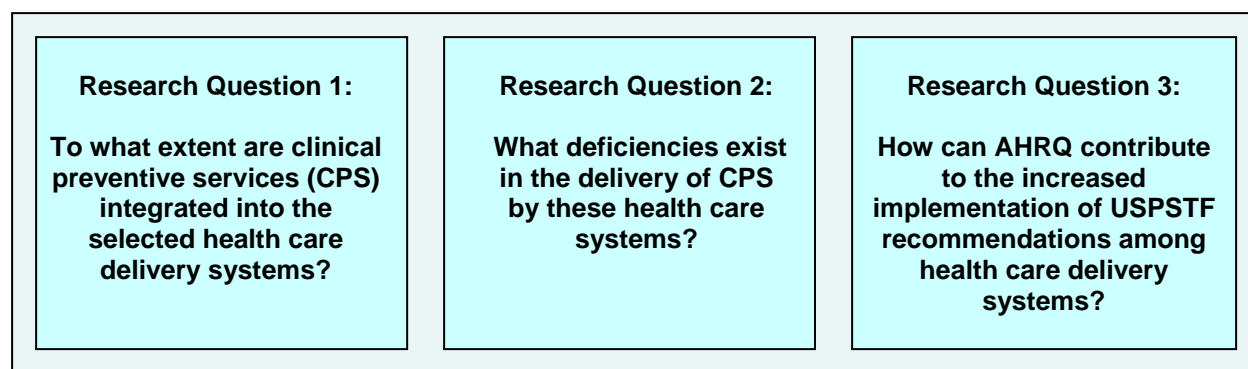
NORC applied a tiered-qualitative approach to design and implement an assessment of the adoption and integration of the USPSTF recommendations. In the first major phase, NORC prepared an evaluation design for AHRQ that posed three key research questions to be explored further through qualitative methods and a case study approach. In the second phase, NORC conducted over 40 semi-structured phone and in-person interviews, reviewed relevant prevention materials provided by

each of the four health plans sites, and prepared a review of the literature on the USPSTF and its impact on the delivery of clinical preventive services. During the final phase of the project, NORC developed five thematic overviews to further explore several key cross-cutting themes related to the adoption, integration, and delivery of the USPSTF recommendations in health plans. In the sections below, we describe the three major project phases in greater detail.

Evaluation Design

NORC designed an evaluation to assess the integration of the recommendations within and across these health plans. NORC worked with AHRQ to select four health plans that vary across a number of key characteristics. NORC addressed the following three research questions in the evaluation:

Exhibit 1: Research Questions



For each research question, NORC explored a range of issues related to the adoption, integration, delivery, and dissemination of the USPSTF recommendations in health plans. Below, we present our research questions and several corresponding sub-topics for consideration.

Research Question 1: To what extent are clinical preventive services (CPS) integrated into the four selected health care delivery systems?

- Are the USPSTF recommendations being delivered?
- Are the health plan sites engaged in clinical or practice change activities?
- Are health information technology systems utilized for CPS integration?
- Does the reimbursement structure reward CPS delivery?
- How is the delivery of CPS measured?
- How is the delivery of CPS monitored?
- Are patient outcomes evaluated relative to the delivery of recommended CPS?

Research Question 2: What deficiencies exist in the delivery of clinical preventive services by these health care systems?

- What prevents the sites from adopting the USPSTF recommendations at the systems-level?
- Are there specific types of recommendations that are easier to adopt and/or implement than others (e.g. depression screening vs. mammography)?
- Are there fundamental issues with the recommendations themselves that prevent adoption and

implementation by health care delivery sites?

Research Question 3: How can AHRQ contribute to the increased implementation of USPSTF recommendations among health care delivery systems?

- How can AHRQ improve its dissemination of the USPSTF recommendations to improve adoption rates at the systems-level?
- Are the USPSTF’s prevention priorities aligned with other systems-level variables, such as payer expectations, industry quality indicators, and consumer demand?
- Are the USPSTF’s prevention priorities aligned with other HHS initiatives that the sites are required to follow?
- Are there any specific tools or information AHRQ could provide to sites to improve integration of the recommendations at the systems-level?

NORC used existing data and primary data collection to explore these research questions. Four evaluation elements were used to guide the evaluation of health plans: (1) Evaluate the impact the USPSTF recommendations have had on improving the delivery of clinical preventive services among the study sites; (2) Evaluate how effectively the USPSTF’s findings are disseminated among the study sites; (3) Evaluate whether the study sites believe the recommendations are adequate in terms of prevention priorities, completeness of the recommendations, and timeliness of the recommendation; and (4) Evaluate the extent to which the USPSTF recommendations align with other HHS and AHRQ priorities and the priorities of external stakeholders such as payers and consumers.

Exhibit 2: Evaluation Elements

Key ● = Main data source Evaluation Elements	Sources of Data			
	Health plan CPS manuals	Interviews with health plan staff	CPS reports and publications	Literature Review
A: Impact of the USPSTF recommendations on the delivery of clinical preventive services	●	●		
B: Dissemination of the USPSTF recommendations	●	●	●	●
C: Adequacy of the USPSTF recommendations	●	●		
D: Alignment of the USPSTF recommendations with other HHS and external stakeholder priorities		●	●	●

Qualitative Interviews and Data Collection

The research questions and themes were used to develop the specific approach for qualitative interviews and data collection. NORC worked closely with AHRQ to select and secure participation from four different health plans: an open-panel health plan in which physicians are independent contractors to the plan, closed-panel health plan in which physicians are health plan employees, “hybrid” health plan in which some physicians are plan-affiliated employees and some are contractors, and a governmental health plan.

Health Plan Site Selection and Recruitment

Selected in concert with AHRQ, the four health plans were chosen based on their operational mix (e.g., open-panel plan, closed-panel plan, hybrid plan, and governmental plan) and willingness to participate in the study. To protect the confidentiality of the health plan sites and the respondents, throughout the report we refer to the four sites as “closed-panel plan,” “open-panel plan,” “hybrid plan,” and “governmental plan.” Selecting these four different types of delivery models provided a valuable look at the integration and delivery of the USPSTF recommendations for clinical preventive services in health plans with different organizational structures. To increase the generalizability of our study findings, we have included four health plans that differ in scope (number of lives covered and provider sites), service area (rural versus urban), organization and management structure (health plan model), and usage of health IT. The participating health plans encompass a variety of unique characteristics that are important to the delivery and integration of the USPSTF recommendations:

- *Closed-panel health plan.* The closed-panel health plan is a centralized managed care organization with regional units across the U.S. Our efforts focused on one of the plan’s regional units that covers over 500,000 members. The plan directly employs physicians on an exclusive basis to provide services. As a result, the physicians of the closed-panel plan are employees of only one health plan, and do not see patients from other managed care plans. Physicians of the closed-panel health plan practice in medical facilities that are owned and managed by the plan.
- *Open-panel health plan.* The open-panel health plan is a decentralized preferred provider organization (PPO), operating through nonexclusive contractual relationships with private physicians and practices who deliver care independently in their offices. The open-panel plan is an independent, not-for-profit health plan that covers more than two million people statewide. In addition to a PPO option, the open-panel plan also operates a large Medicaid managed care program.
- *Hybrid health plan.* The term “hybrid plan” has been used in recent empirical literature to describe a mixed-model plan that encompasses features of both open- and closed-panel health plans.⁹ The hybrid health plan is composed of a core group of physicians that are also associated with a parent health system, with the remaining providers operating under contract to the health plan. Approximately half of the hybrid plan’s members seek health care services from providers that are directly employed by the health system, while the other half seek services from independent providers contracted by the system. This mixed-model dynamic has interesting implications for the delivery of clinical preventive services to members.
- *Governmental health plan.* The governmental health plan is part of a larger public health care system that serves a population of approximately 25 million people nationwide. For the

purposes of this study, we focus on one health plan facility under the umbrella of the larger governmental system. Formed as a result of an integration of two large medical center campuses in one state, the governmental health plan offers primary and secondary medical and surgical care services, chronic and acute psychiatry care, nursing home care, and extended care for its members.

The different health plan models were selected for several reasons. First, we hypothesized that the governmental plan and closed-panel plan could more effectively facilitate the dissemination of the USPSTF recommendations and delivery of clinical preventive services through the use of clinical decision support tools via system owned information systems as well as employer incentives. Such plans may be an ideal environment for efficient adoption and integration of the USPSTF recommendations. Including an open-panel plan provided information about how clinical preventive services are delivered through a more decentralized system whereby information systems may be less integrated than in the closed-panel system. By including a hybrid system, which encompasses features of both open and closed-panel plans, we were able to examine these issues within a single health plan in addition to our analysis across health plans.

Early in our interactions with the sites, we identified a key contact at each of the four health plan sites to serve as a resource for identifying the appropriate staff for data collection. NORC sent a letter of invitation to each health plan's Medical Director which included a description of the project, the project purpose, and an outline of the activities related to participation. The letter also conveyed the importance of the project to AHRQ and its potential for improving the utilization of the USPSTF's products by health plans. NORC mailed the invitation letters by Federal Express to highlight the importance of the project and ensure receipt. Within one week of mailing the letters, NORC's project director called the Medical Directors to further discuss participation in the project, including the need for the health plan site to supply prevention materials, clinical preventive services manuals, and other relevant data.

Health Plan Staff Interviews

After participation was secured, NORC worked with the Medical Director and site contact to request contact information for participants for interviews. NORC specifically asked to interview individuals in several different kinds of positions. The Medical Director and/or site contact worked with NORC to select the appropriate health plan staff participants to fulfill the following roles:

- Medical Director
- Director of Quality Improvement
- Director of Health Information Technology
- Clinical Advisors²
- Quality Improvement Staff
- Health Information Technology Staff

Health plan sites provided NORC with the names and contact information (phone numbers and email addresses) for the prospective study participants. Prospective participants were sent an initial

² For the purposes of this study, Clinical Advisors are primary care physicians or specialty care providers, who also serve in a leadership or broader prevention role at their health plan.

email that explained the purpose of the USPSTF study and requested their participation as well as a follow-up phone call to schedule a time for a one hour phone or in-person interview. Health plan staff respondents were promised anonymity in this report, and will hereafter be referred to according to their designated titles and plan only (e.g., Director of Quality Improvement from the open-panel plan, Health IT staff from the closed-panel plan, etc). In the initial email, NORC also provided study participants with a web link to the USPSTF recommendations. Neither health plans nor individual participants were offered a financial or in-kind incentive to encourage participation.

NORC developed an interview guide that is organized into modules reflecting the perspective of the particular respondent type: Medical Director, Director of Prevention and Quality Improvement, Quality Improvement Staff, Director of Health IT, Health IT Staff, and Clinical Advisor. [The interview protocols are provided in the Appendix.] Given the different types of health plans and differences in the range of activities involved in the delivery of clinical preventive services, NORC peppered the interview guide with additional follow-up questions, when appropriate, that focused on topics or issues that were directly relevant to each health plan. Consequently, no two interviews followed the exact same protocol.

NORC gathered as much information about each health plan site as possible prior to the interviews, including information collected from public and private reports, electronic media, and the published and gray literature, to ensure that we were fully informed about each site. Phone interviews were conducted with representatives of the open-panel plan, closed-panel plan, and governmental plan, and in-person interviews were conducted with representatives of the hybrid plan. One senior and one intermediate-level NORC health research staff member facilitated the interviews, assuring appropriate coverage of the research areas of interest, but allowing interviewees to discuss other issues freely. An additional NORC researcher served as a note-taker for each interview.

NORC interviewed 42 health plan staff members from four different health plans. Exhibit 3 presents the distribution of the sample across health plans and respondents. Participants were administered one of five interview protocols, depending upon their role at the health plan (e.g., the Medical Director was asked a series of questions from the Medical Director protocol). As a result, while the Director of Quality Improvement protocol was used for 12 respondents, all of these individuals were not necessarily Directors of Quality Improvement; rather these respondents were selected by their health plans to provide perspectives for this particular module.

Exhibit 3: Distribution of Respondents by Protocols Used

<i>Respondents by Protocols Used (n=42)</i>	Open-Panel Plan (n=10)	Closed-Panel Plan (n=12)	Hybrid Plan (n=9)	Governmental Plan (n=11)
Medical Director (n=3)	2	0*	0*	1
Director of QI (n=12)**	4	5	1	2
Director of Health IT (n=7)**	3	1	2	1
QI Staff (n=4)	0*	1	2	1
Health IT Staff (n=6)	0*	2	2	2
Clinical Advisor (n=9)	1	3	2	3
Other (n=1)^	0	0	0	1

*We were not able to interview respondents in these categories.

**The large number of Directors of Quality Improvement and Health IT reflects that we administered these protocols to multiple respondents at each plan. The Directors of Quality Improvement and Health IT protocols contain several high-level questions that the corresponding staff protocols do not (refer to the Appendix).

^The interviewee is a senior-level manager at the headquarters office of the governmental health plan. The respondent was asked a combination of questions from more than one protocol.

Discussion Topics

We asked individual respondents about their familiarity with the USPSTF recommendations, the adoption, integration, and delivery of the USPSTF recommendations in their health plans, challenges or barriers they face, and specific ways that AHRQ can improve the dissemination of the USPSTF recommendations to increase adoption rates at the systems-level. In addition, respondents that hold positions related to quality improvement and health IT were asked questions about the monitoring and measurement of clinical preventive services and the level of integration using health IT. Discussion topics for respondents are described in further detail in Exhibit 4 and the accompanying text.

Exhibit 4: Discussion Topics for Respondents

Discussion Topic	Medical Director	Director of QI	Director of Health IT	QI Staff	Health IT Staff	Clinical Advisors
Familiarity with USPSTF recommendations	☐	☐	☐	☐	☐	☐
Methods of adopting CPS	☐	☐	☐			☐
Dissemination of adopted USPSTF recs in the system	☐	☐	☐			☐
Monitoring and measurement of CPS		☐	☐	☐	☐	
Systems-level integration of CPS using health IT			☐	☐	☐	
Barriers to adoption, integration, and delivery of USPSTF recs	☐	☐	☐	☐	☐	☐
Alignment with systems-level variables and priorities	☐	☐				☐
AHRQ's role in improving dissemination of USPSTF recs	☐	☐	☐	☐	☐	☐

- *Familiarity with USPSTF recommendations.* We asked respondents about their familiarity with the Task Force recommendations.
- *Methods of adopting clinical preventive services (CPS) recommendations.* We asked respondents about the process used to review clinical preventive services recommendations from the USPSTF and other sources. We also asked about the criteria used to select which recommendations will be adopted.
- *Dissemination of adopted USPSTF recommendations in the system.* We asked whether all or some of the “A” and “B” USPSTF recommendations are being delivered and how those recommendations are disseminated among health plan providers.
- *Monitoring and measurement of CPS.* We asked health plan staff whether their plans are engaged in practice change or quality improvement (QI) activities. We asked respondents to list and discuss major QI activities that are used to improve the adoption and integration of clinical preventive services. Finally, we asked about the monitoring and measurement of CPS (e.g., how is the delivery of CPS measured and monitored) and whether patient outcomes are evaluated relative to the delivery of recommended CPS.
- *Systems-level integration of CPS using health IT.* We asked respondents whether health IT is utilized to integrate CPS recommendations from the USPSTF and other sources.

- *Barriers to adoption, integration, and delivery of recommendations.* We asked health plan staff what deficiencies exist in the delivery of CPS by their health care systems and what prevents their sites from adopting the USPSTF recommendations at the systems-level. In addition, we asked whether specific types of recommendations are easier to adopt and implement than others (e.g., screening vs. counseling) and whether there are fundamental issues with the recommendations themselves that prevent integration and implementation in health plans.
- *Alignment with systems-level variables and prevention priorities.* We asked whether the USPSTF's prevention priorities are aligned with other systems-level variables, such as payer expectations, industry quality indicators, and consumer demand. We also asked respondents whether the USPSTF's prevention priorities are aligned with other state or Federal initiatives, and how the USPSTF could better align the recommendations with other variables and initiatives.
- *The impact of reimbursement.* We asked whether the reimbursement structure at each plan rewards the delivery of clinical preventive services.
- *AHRQ's role in improving dissemination.* We asked health plan staff how AHRQ can improve dissemination of the USPSTF recommendations in order to increase adoption rates at the systems-level. Specifically, we asked respondents about their perceptions of the packaging of the USPSTF recommendations, and whether more information about the methodology would be useful. Finally, we asked whether there are any specific tools or information AHRQ can provide to improve integration of the recommendations at the systems-level.

Data Analysis

NORC compiled the qualitative findings from the phone calls and site visit discussions into a Microsoft Access database. Interview notes were regularly reviewed to highlight unanswered questions and raise areas for further consideration. In addition, during the data analysis phase of the project, NORC mapped the research questions to the interview notes to identify key themes and findings.

Our findings should be interpreted in light of the fact that the study methods employed for this project were inherently qualitative. The four health plans cannot be assumed to represent the entire universe of health plans integrating the USPSTF recommendations. Rather, the four health plans represent a convenience sample, as each agreed to participate in the study. Nevertheless, these plans do encompass a variety of characteristics that may affect the delivery and integration of the USPSTF recommendations. The plans are unique in many aspects, including service area, geography, demographics, and methods for integrating and delivering CPS recommendations. Additionally, within each plan, we interviewed a wide sample of respondents with different focus areas, or in the case of the Clinical Advisor respondents, different medical specialties.

We developed an interview protocol that contains a variety of open-ended questions in order to gain unique insights and information from respondents. Due to the open-ended nature of the research questions, it is not possible to precisely present the findings in a quantitative fashion. Rather, the results of this evaluation are discussed more generally in the body of the findings section.

Thematic Overviews

NORC prepared five stand-alone thematic overviews which explore several key cross-cutting themes related to the adoption, integration and delivery, and dissemination of the USPSTF recommendations. Each overview presents best practices or key findings across the four health care

delivery sites. Data from qualitative interviews with health plan respondents, expert interviews, and relevant reports and scholarly literature were used to produce the case studies.

The thematic overviews explore important issues related to the adoption, integration, and delivery of the USPSTF recommendations. Where appropriate, overviews present recommended next steps and opportunities to improve the adoption, integration, and delivery of the USPSTF recommendations. The first overview explores the impact of pay-for-performance on the delivery of the USPSTF recommendations. The second explores the role of health IT in the integration and delivery of the USPSTF recommendations. In the third overview, we suggest systems changes that are needed to improve the implementation of the USPSTF recommendations. The fourth explores the impact of health plan structures on the delivery and integration of the USPSTF recommendations. Finally, the fifth overview explores the impact of a rural health care setting, and the associated challenges of delivering the USPSTF recommendations to a rural patient population.

III. BACKGROUND

NORC examined the published and unpublished literature on the USPSTF, and reviewed documents that analyzed, commented on or evaluated the most relevant literature on the USPSTF from 1991 to the present. While not comprehensive, this brief review of literature presents a sample of the studies that have explored the utilization and impact of the USPSTF recommendations in health care settings. Research studies, observational studies, surveys, cross-sectional evaluations, qualitative analyses and other reports were identified and summarized from peer-reviewed clinical and policy journals. Literature was identified through a number of methods, including a search of published materials using Academic Search Premier, Medline, and other major health services research databases as well as the search tools of websites for major health policy journals such as *Health Affairs*, *Annals of Internal Medicine*, and the *American Journal of Preventive Medicine*. In addition to peer reviewed literature, we conducted a search of popular media and materials relevant to the topic of the USPSTF program published on the Internet or otherwise publicly available through use of search engines such as Google.com. Searches were conducted on Google Scholar to obtain access to the “gray” literature (e.g., reports and news sources not catalogued in electronic peer-reviewed literature databases but available online). As expected, many of the documents were found as a result of “snowballing,” in which the citations from a source identified through traditional searches are examined to identify additional sources.

Review of the Literature on the USPSTF and Clinical Preventive Services

The USPSTF provides clinicians with a valuable service, gathering and analyzing the available literature on preventive medicine and transforming it into sound evidence-based recommendations. The Task Force’s recommendations are regularly updated and made available to patients, physicians, and health plans via the USPSTF section of the Agency for Healthcare Research and Quality (AHRQ) website, various journal publications, and the *Electronic Preventive Services Selector (ePSS)* software tool for physicians to use on their personal digital assistants. Yet, despite the value and ease of attaining the USPSTF recommendations, patients are not receiving the recommended amount of preventive services.^{10,11,12,13,14,15,16}

The delivery of clinical preventive services—those services recommended by the USPSTF and other organizations—is affected by factors at both the individual and systems levels, including: physician time; physician awareness and attitudes; patient attitudes and expectations; presence or absence of implementation tools; financial incentives or disincentives;¹⁷ and efforts designed to increase the

delivery of clinical preventive services. In the past fifteen years, researchers have utilized several methods to examine these factors, including case studies, patient and physician surveys, and medical record audits. The findings of this research are summarized below.

A study of 230 adults in family practice clinics by Medder et al. (1992) found that the average adult seeking outpatient care presented with 15.4 risk factors, making the patient eligible for 24.5 recommended services according to the USPSTF recommendations.¹⁸ This finding highlights the challenge confronting primary care physicians in busy practices to incorporate all of the USPSTF recommended services in the limited time available during routine care. Through an observational study, Zyzanski et al. (1998) found that high-volume practices¹⁹ had a significantly lower proportion of patients with up-to-date screening, counseling, and immunizations recommended by the USPSTF.²⁰ A potential cause of the low proportion of up-to-date patients in high volume practices is that high volume practices schedule 33% fewer well-care visits.²¹ A survey of family physicians using a hypothetical case scenario found that the USPSTF recommendations were delivered more often during the well visit than the illness visit presented in the case scenario.²² The low rates of health maintenance visits, especially in underserved populations, decrease the number of opportunities for community physicians to administer recommended preventive services. Recognizing this concern, the USPSTF recommended the delivery of preventive services during illness visits in 1996.²³

Soon thereafter, an observational study of community family physicians was conducted to evaluate the effectiveness of the Task Force's recommendation to provide preventive services during illness visits.²⁴ Stange et al. (1998) found that preventive services were delivered 32.5% of the time, averaging 1.7 preventive services per visit.²⁵ These preventive services were delivered in 39% of the chronic illness visits and 30% of the acute illness visits, and tended to be recommendations related to counseling on health habits rather than immunizations or screenings.²⁶ One possible explanation may be the length of the visit: the illness visits with preventive services were, on average, two minutes longer than visits without.²⁷ Some research has suggested that patients may be more likely to receive preventive services related to their presenting signs and symptoms during an illness visit as the illness may provide the impetus for prevention and/or a teachable moment.²⁸ Other research seems to indicate that patients may not receive the clinical preventive services most appropriate for their signs and symptoms. A survey of psychiatric patients by Carney et al. (2002) found that those preventive services perhaps most critical to their conditions—counseling on firearm ownership and alcohol avoidance while driving—were received by significantly fewer patients than were screening tests and immunizations.²⁹

The time constraints of family physicians are a widely recognized barrier to the delivery of USPSTF recommendations, as preventive services are just one of many competing demands on a physician's time. In a study to estimate the total time burden of implementing USPSTF recommendations, Yarnall et al. (2003) found that physicians would need 7.4 hours per day to implement the recommendations in every case that warranted a preventive service.³⁰ Recognizing the need for physicians to prioritize the USPSTF recommendations, the Task Force evaluates each recommendation based on the burden of suffering from the target condition and the effectiveness of the preventive service. The Yarnall et al. study found that performing even just the "A" rated services would take a physician two hours per day to implement. The study concluded that preventive services are competing with each other for a physician's time. This has led a number of researchers to recommend that the Task Force develop a more comprehensive evaluation system.

Stange et al. (1994) recommends that physicians should prioritize preventive services based on the patient's risk factors, values, ability to pay, reason for the visit, and their own knowledge and skills.³¹

Other researchers feel that the USPSTF should base its evaluations on all available data, including analysis of cost effectiveness and clinically preventable burden, in order to rank its recommendations and increase their utilization by time-crunched primary care providers.^{32,33} The current USPSTF review process includes information from cost-effectiveness analyses in developing recommendations, although such information is generally only included for recommendations where relevant questions regarding cost-effectiveness exist.³⁴

An alternative explanation for the low level of USPSTF recommended services provided is that physicians may not be aware of, or may not have confidence in, the recommendations. Several researchers have investigated this question and found that, counter to what might be expected, the relationship between a physician's attitude toward the USPSTF recommendations and his or her delivery of the services may not be correlated. A survey of family physicians in New York found that a large majority believe that evidence-based recommendations are effective for educating physicians, family practice residents, and students.³⁵ Specifically, these same physicians are confident in the USPSTF recommendations, ranking them second only to the clinical recommendations published by their professional organization, the American Academy of Family Physicians.

A study from the Improving Preventive Services through Organization, Vision, and Empowerment (IMPROVE) initiative found that approximately 83% of primary care doctors and nurses surveyed believe that pneumonia and influenza vaccinations are important or very important; 90% believe tobacco screening and cessation counseling are important or very important; 95% believe that cholesterol screening is important or very important; and between 98 and 100% believe hypertension screening, breast examinations, mammograms, and Papanicolaou screenings are all important or very important.³⁶ However, this same study found little evidence of a correlation between physician attitudes and delivery of preventive services. Only four preventive services that researchers examined had a statistically significant correlation with physician attitudes: cholesterol screening, tobacco use screening, smoking cessation counseling, and Papanicolaou screenings. Of those four, only tobacco use screening and providing smoking cessation counseling were positively associated with clinician attitude. Although clinicians appear to have confidence in the USPSTF recommendations and believe delivery of clinical preventive services to be important, these factors do not seem to actually affect the rates of delivery.

Systems-level factors may also play a role in the delivery rates of clinical preventive services. While the IMPROVE survey found a strong belief among nurses and physicians that clinical leaders are committed to the delivery of preventive services in their organization, several researchers believe that organizations may not be well-equipped to facilitate the delivery of the USPSTF recommendations. Researchers have suggested several factors—including manual or computer assisted reminder and tracking systems and more involvement of non-physician personnel—to increase the likelihood of the recommended services being delivered.^{37,38,39,40,41,42} One researcher found that the combination of a commitment to the delivery of preventive services and a flow sheet to ensure that preventive services are discussed with every patient could increase delivery rates significantly, without decreasing the number of patients seen per day.⁴³ The flow sheet protocol added just over two minutes to each visit in which time, health habits counseling, screening, immunization, and follow-up visits were discussed.

Researchers have also remarked that adding preventive services systems will not only increase the number of USPSTF recommendations performed, but decrease the number of non-recommended services. In the survey of family physicians using the hypothetical case scenario discussed above, Stange et al. (1994) found that while several USPSTF services were performed during the health maintenance visit, so were an alarming number of non-recommended services performed.⁴⁴ This

could be attributable to patient expectations, though several studies have found that patient satisfaction with a visit is not affected by the absence or addition of recommended preventive services.⁴⁵ Exploring further, the authors found that the physicians delivering a high rate of USPSTF services and a low rate of non-recommended services were generally younger, less likely to be in solo practice, residency trained, and had significant exposure to the USPSTF recommendations. Understanding the characteristics associated with delivery of the recommended USPSTF services will help clinic organizers to best direct resources to achieve high delivery rates of recommended services.

While the majority of research on delivery of clinical preventive services has focused on the clinician and patient point of service, some researchers point to systems-level factors such as reimbursement and patient outreach as possibly affecting the rate of service delivery. In 1999, Merenstein et al. published a study in which 10 medical directors representing six types of health plans were interviewed about clinical preventive services at their health plans. Specifically, the medical directors were queried on the method of adoption of clinical preventive services, which services were paid for, frequency and age groups for services, and patient encouragement to obtain services. The authors concluded that while little difference existed between the plans in terms of which preventive services are recommended and covered, plans seemed to be influenced more by consumer demand and public opinion than by evidence.⁴⁶ Perhaps further underscoring the need for a systems-level, evidence-based approach to the adoption and integration of clinical preventive services, the authors note that in all but one plan, a new service was considered only when a physician or patient initiates a claim for that service.⁴⁷

Mehrotra et al. (2006) compared the quality of care provided to patients by physicians who are part of integrated medical groups (IMGs) [centralized organizations in which physicians are employees or participants in a partnership arrangement] and independent practice associations (IPAs) [decentralized groups in which physicians generally have nonexclusive contractual relationships and typically manage their offices independently]. In the study, quality was measured as the percentage of eligible patients receiving three clinical preventive services (mammography, Papanicolaou screening, or Chlamydia screening) or three chronic disease management measures (diabetic retinal examination, asthma controller medication, or β -blocker use after acute myocardial infarction). The authors concluded that patients in IMGs generally received more recommended clinical preventive services than those in IPAs, but noted that neither the presence of an EMR nor the implementation of quality improvement (QI) strategies explained the differences in quality in their study.⁴⁸ They caution, however, that compared with the period of their study [1999-2000], quality improvement processes and EMRs are now more established and may therefore have a stronger positive association with quality. However, support for quality improvement as a means of improving clinical preventive services remains mixed. Some studies have shown limited, inconsistent, or no benefits of quality improvement activities as a means of increasing the delivery of clinical preventive services,^{49,50,51} while other researchers have demonstrated a positive correlation.^{52,53}

Measuring the effect of quality improvement processes and interventions on rates of clinical preventive services delivery creates many obstacles, often cited as study limitations by researchers. These include: the time lag between the initiation of a quality improvement activity – which may increase the accuracy of documentation of the targeted services – and the actual increase in delivery of those services; inconsistency between patient reports and medical record audits; the incomplete picture of preventive service delivery resulting from the use of claims or Health Plan Employer Data and Information Set (HEDIS) data to measure and monitor delivery rates; and physician and staff awareness that a particular service or services have been targeted for improvement. Kim et al.

(1999) tested whether either provider education or comprehensive intervention, consisting of education, peer-comparison feedback “report cards,” and academic detailing, would affect preventive services delivery rates. The authors found few differences between the education-only and comprehensive intervention groups, and, indeed discovered that delivery rates decreased for some services in the education-only group.⁵⁴ The authors hypothesize that this decrease may have been related to physician attitudes and patient expectations – the services in question were mammography, clinical breast examinations, and influenza immunizations.

Clearly, the factors affecting the delivery of the clinical preventive services recommended by the U.S. Preventive Services Task Force are complex and often interrelated. The literature shows that physician time and the inability to prioritize recommendations are perhaps the greatest challenges to the delivery of clinical preventive services. The resultant delivery of clinical preventive services is often inconsistent, incomplete, and based on factors other than evidence-based recommendations like those established by the USPSTF. Such factors include patient symptoms, cost effectiveness, and other opinions about preventive services – such as those of the individual, the public, and of specialty societies.

While clinicians value the USPSTF recommendations and believe they are scientifically sound, evidence-based, and objective, the organizations in which clinicians practice may lack the tools, systems, and resources that facilitate the delivery of the clinical preventive services recommended by the USPSTF. Examples of these factors include implementation systems such as an electronic medical record, quality improvement strategies to increase the appropriate delivery of clinical preventive services, and a multitude of system characteristics that range from reimbursement to an organizational culture of prevention. The literature suggested that further research is needed to better understand the factors that affect integration and delivery of the USPSTF recommendations. Furthermore, policies and tools must be developed to overcome challenges to integration and improve the delivery of the USPSTF recommendations.

IV. FINDINGS

To explore the adoption, integration, delivery, and dissemination of the USPSTF recommendations, we interviewed a total of 42 health plan staff members from four health plans across the U.S. The health plans differed in scope (number of lives covered and provider sites), geography (rural versus urban), organization and management structure, and technological sophistication. The closed-panel plan operates 31 medical centers and serves over 500,000 members regionally, while the hybrid plan operates a large ambulatory program that serves more than 245,000 members across 17 counties in one state. The governmental plan is unique in that it operates in concert with a larger public health system. The open-panel plan serves both urban and rural patient populations, and operates a PPO and large Medicaid managed care program. Before describing the findings, Exhibit 5 below provides an overview of key plan features to illustrate the differences among participating sites.

Exhibit 5: Features of Health Plans

Health Plans	Open-Panel Plan	Closed-Panel Plan	Hybrid Plan	Governmental Plan
Membership Size (< 300,000)			☐	
Membership Size (300,001- 500,000)		☐		
Membership Size (> 500,001)	☐			☐
Service area is one state	☐		☐	☐
Service area is regional		☐		
Serves a large rural population	☐		☐	☐

Next, we present project findings related to: 1) adoption of the USPSTF recommendations, including familiarity with the recommendations, and the process of accessing, adopting and integrating the recommendations; 2) integration and delivery of the USPSTF recommendations, including incorporating the recommendations into practice, major uses of health IT and quality improvement, the impact of reimbursement structures and other factors, and barriers to integration and delivery of the recommendations; and 3) improving dissemination of the USPSTF recommendations in health plans.

I. Adoption of the USPSTF Recommendations in Health Plans

The synthesis of findings begins with the adoption of the USPSTF recommendations in the health care plans. We discuss respondents’ familiarity with the recommendations, the methodology underlying the recommendations, and the “A” and “B” USPSTF recommendations. We then examine the process for adopting the USPSTF recommendations and the barriers to adopting the USPSTF recommendations. Finally, we examine the methods for accessing the recommendations.

1.1 Familiarity with the Recommendations

Familiarity with the USPSTF Recommendations. Study participants were asked: “How familiar are you with the USPSTF recommendations for clinical preventive services?” Overall, we found that the respondents were familiar with the USPSTF recommendations. However, reported familiarity varied dramatically. The majority of respondents indicated that they are “somewhat” or “fairly” familiar with the recommendations. Many respondents indicated that they have heard of the USPSTF recommendations, but do not know them well enough to cite specific examples. A few respondents indicated that they had not heard of the USPSTF recommendations at all prior to our interview. For analysis purposes, we depict respondents as “familiar plus” (indicating they have at least some familiarity with the recommendations) and “not familiar” (indicating they are not familiar with the recommendations). A small number of respondents also chose not to answer this question. Our results are presented in Exhibit 6.

Exhibit 6: Familiarity with the USPSTF Recommendations Across Health Plans

Familiarity with the USPSTF Recommendations	Familiar Plus	Not Familiar	No Answer
Closed-Panel (n=12)	9 (75%)	3 (25%)	0 (0%)
Open-Panel (n=10)	9 (90%)	0 (0%)	1 (10%)*
Governmental (n=11)	5 (45%)	5 (45%)	1 (9%)*
Hybrid (n=9)	7 (78%)	2 (22%)	0 (0%)
Total (n=42)	30	10	2

Respondents were asked: “How familiar are you with the USPSTF recommendations for clinical preventive services?” Respondents categorized as “Familiar plus” had at least some familiarity with the USPSTF recommendations, while those categorized as “Not Familiar” had no familiarity with the recommendations.

* These respondents were a Director of Health IT and Health IT staff member, respectively.

Across plans, the closed-panel and open-panel plans had the largest number of respondents that were at least somewhat familiar with the USPSTF recommendations, though familiarity ranged from strong familiarity with the USPSTF recommendations to only having heard of the USPSTF recommendations. The government plan had the fewest number of respondents that were familiar with the USPSTF recommendations, with half of the respondents indicating that they had never heard of the USPSTF recommendations. The hybrid plan fell somewhere in between, with the majority of respondents having some familiarity with the USPSTF recommendations.

The respondents who were most familiar with the USPSTF recommendations for the open-panel plan, closed-panel plan, and the governmental plan fulfilled a similar role: the Clinical Preventive Services Guidelines Coordinator.⁵⁵ The CPS Guidelines Coordinator works within the departments of quality improvement or medical policy management to spearhead the adoption of CPS recommendations for each plan. As a result, the CPS Guidelines Coordinator had a very strong familiarity with recommendations from the USPSTF and other sources. Overall, the Directors of Quality Improvement and Clinical Advisors also tended to be more familiar with the USPSTF recommendations than Health IT Directors and Health IT Staff respondents.

Approximately one quarter of the respondents indicated that they were not familiar with the USPSTF recommendations or had not heard of the USPSTF prior to the interview. However, it is quite possible that this could be an underestimate. Interviewees were provided with a description of the project when we requested their participation, which included a link to the USPSTF recommendations. As a result, respondents indicating that they are “somewhat” or “fairly” familiar with the recommendations may have not been familiar prior to the interview.

Exhibit 7 explores which types of health plan respondents were unfamiliar with the recommendations across health plans. For each health plan, we indicate the number of respondents who were *not* familiar with the USPSTF recommendations. We also identify their roles in the health plans. Health IT Staff respondents were least familiar with the USPSTF recommendations, followed by Quality Improvement Staff and Clinical Advisors.

Exhibit 7: Respondents Who Were Not Familiar with the USPSTF Recommendations

Not Familiar with the USPSTF Recommendations	Open-Panel	Closed-Panel	Hybrid	Governmental	Total	Total/n
Medical Director (n=3)					0	0%
Director of QI (n=12)		1			1	8%
Director of Health IT (n=7)			1	1	2	29%
Clinical Advisor (n=9)				2	2	44%
QI Staff (n=4)				1	1	50%
Health IT Staff (n=6)		2	1	1	4	67%
Other (n=1)					0	0%
Total Unfamiliar (n=42)	0	3	2	5	10	24%

Respondents were asked: “How familiar are you with the USPSTF recommendations for clinical preventive services?” Respondents categorized as “Familiar Plus” had at least some familiarity with the USPSTF recommendations, while those categorized as “Not Familiar” had no familiarity with the recommendations.

Familiarity with the Methodology Underlying the Recommendations. The USPSTF has a distinct process for selecting and prioritizing its recommendations. After reviewing the evidence and estimating the magnitude of benefits and harms for each preventive service, the USPSTF grades the strength of the evidence from “A” (strongly recommends) to “D” (recommends against) or “I” (insufficient evidence to recommend for or against). We did not explicitly ask respondents to describe their familiarity with the methodology underlying the USPSTF recommendations. However, our conversations with respondents provide evidence to suggest that many were unfamiliar with this methodology.

When asked the question, “are all or some of the services that are recommended by the USPSTF, the “A” and “B” recommendations, being delivered throughout your healthcare system,” approximately 15% of respondents (6 out of 41 respondents) indicated that they could not answer because they were unfamiliar with the USPSTF’s grading terminology.³ These respondents were Directors of Quality Improvement, Quality Improvement Staff, and a Clinical Advisor.

While some respondents were unfamiliar with the methodology underlying the recommendations, approximately 40% of all respondents indicated that they would like to know more about the process behind the USPSTF recommendations. We asked respondents whether it would be helpful to know more about the process the USPSTF uses to select and prioritize the recommendations: “Do you believe it would be helpful if the Task Force did more to disseminate information about its process for selecting and prioritizing recommendations? By that, I mean, would knowing more about the process behind the recommendations affect the way in which [the health plan] adopts and integrates the Task Force recommendations?” Seven out of the 12 Directors of Quality

³ The sample size for this question is 41 respondents rather than 42. An expert interview was conducted with a senior-level manager at the governmental plan’s system headquarters. The respondent was not asked this question.

Improvement and three out of the four Quality Improvement staff members indicated that they would like to know more information about the process used by the USPSTF. Medical Directors were also interested in learning more about the process behind the USPSTF recommendations. Interestingly, Directors of Quality Improvement from both the open- and closed-panel plans indicated that providers would be the most likely people to desire a better understanding of the process underlying the recommendations. We did not find this to be the case.

Only about half of the Clinical Advisors were interested in receiving more information about the process used by the USPSTF. Clinical Advisor respondents indicated that they already understand the methodology underlying the recommendations, or they “have trust in the process used by the USPSTF.”

Another interesting finding is that, from our conversations with respondents, it appears that many people do not understand that the USPSTF utilizes a rigorous cost-benefit methodology to grade its recommendations. For example, one respondent at the closed-panel plan responded that the USPSTF does not specifically provide information about the cost-benefit analysis that underlies the recommendations:

“I’ll tell you what most frontline physicians don’t understand – the Chlamydia screening and that there is an upper age limit. They want to screen 50 year olds when the benefits or lack thereof are poorly understood. One of the things that would be very helpful would be if the Task Force completed an analysis of the costs and benefits as one moves out of the arena of routine screening. I’ve looked closely at Chlamydia. The positivity rate of [screening people] 45 years and older approaches the false-positivity rate of the test. People in public health understand that, but I don’t think that’s out there explicitly as part of a recommendation.”

This respondent indicated that it would be helpful to know more about the methodology employed by the USPSTF.

Familiarity with USPSTF Tools and Products. Many respondents were not aware that AHRQ disseminates a line of tools and products that incorporate the USPSTF recommendations, such as the *Put Prevention into Practice* materials, the *Electronic Preventive Services Selector* (ePSS), a pocket manual of recommendations, and email updates. Health IT Directors and Staff, in particular, were unaware of the products disseminated by the Task Force. This finding became apparent when a number of respondents in various positions recommended that AHRQ create “new” tools and products that already exist.

- A Clinical Advisor for the governmental plan recommended that AHRQ would improve dissemination of the USPSTF recommendations by creating a small hand-held manual of the recommendations for clinicians. Given that a “pocket guide” for clinicians is already available (downloadable from the AHRQ website), it is clear that this Clinical Staff member was not familiar with the USPSTF prevention tools available from AHRQ.
- A Director of Quality Improvement from the closed-panel plan recommended that AHRQ categorize the recommendations according to patient characteristics. The respondent indicated that the recommendations are only user-friendly “if you want to look up recommendations for a specific disease” but not user-friendly “if you want to look up the recommendations for a specific patient.” The respondent was not aware that AHRQ already has tools such as the *Electronic Preventive Services Selector* (ePSS), which enables clinicians to search the recommendations by specific patient characteristics, such as age, sex, and selected behavioral risk factors.⁵⁶

- A Medical Director respondent from the governmental plan suggested that AHRQ could disseminate more information about the process the USPSTF uses to select and prioritize the recommendations by including a link about the Task Force’s methodology, accessible via the website. The USPSTF website currently has a link about the methodology as well as information on the questions and answers page that addresses the process used to select and prioritize recommendations.
- When asked if there are any specific tools or information that AHRQ could provide to improve the integration of the Task Force recommendations at the systems-level, a Director of Quality Improvement from the closed-panel plan asked: “Do they put out a newsletter? A lot of organizations have newsletters or links that can be sent out to people who are interested in being subscribers to their journals. Then, you can read all you want. I don’t remember seeing anything from [the Task Force].”
- A Director of Quality Improvement from the closed-panel plan indicated that he/she was unaware that the Task Force offered email updates about new recommendations. The USPSTF does enable interested users to sign up for the AHRQ Prevention Program listserve which circulates new and updated recommendations from the USPSTF and new resources from the *Put Prevention into Practice* program.
- A Director of Quality Improvement from the open-panel plan indicated that it would be helpful to know more about the Task Force’s tools and products. When asked if there are any specific tools or information that AHRQ could provide to improve integration of the recommendations at the systems-level, the respondent told us: “I’m not familiar enough with the tools. I’m only familiar with the written [recommendations] – the full text and summary [recommendations] on the website. I did notice that there are personal digital assistants (PDA) downloads available. I don’t know if those are available in sections or by different categories.”

1.2 Process for Adopting the USPSTF Recommendations

Each health plan has its own unique process for adopting clinical preventive services recommendations from the USPSTF and other sources. To learn more about the process and practice of adopting the USPSTF recommendations, and clinical preventive services recommendations, more generally, we asked respondents two key questions:

- “Can you describe the process that [your health plan] uses to review clinical preventive services recommendations, from the Task Force and from other sources, when deciding whether or not those recommendations should be adopted and integrated into your system?”
- “If you don’t implement all of the recommendations, what are the reasons or criteria [your health plan] uses to select which recommendations will be integrated?”

The sections below synthesize the responses we received and elaborate on several key findings. Exhibit 8 depicts these findings, highlighting distinctions across plans.

Process and Practice of Adopting the USPSTF Recommendations. As depicted below, the closed-panel plan and governmental plan comply with recommendations for clinical preventive services issued by their respective systems-level or national headquarters. However, the degree of compliance with these nationally-determined recommendations – and relative autonomy to deviate – differs dramatically. In the open-panel and hybrid plans, the process of adopting the USPSTF

recommendations occurs at the plan level only; various committees provide a place for organizational dialogue on prevention issues and to develop their own plan guidelines. The importance of provider involvement in adopting clinical preventive services recommendations is also a key finding across all four plans.

Exhibit 8: Process for Adopting CPS Recommendations

Key Elements	Open-Panel	Closed-Panel	Hybrid	Government
CPS recs are determined at the national or systems-level		☐		☐
Plan reviews and adopts CPS recs locally	☐	☐	☐	
Expert opinion plays a role	☐	☐	☐	*
Consensus-based decision-making plays a role	☐	☐	☐	*
Plan consults the USPSTF recs during the process	☐	☐	☐	☐
Plan consults other organizations that issue CPS recommendations	☐	☐	☐	☐

Note: An astrix depicts that there is not enough information to make a classification.

The closed-panel plan has a great degree of local autonomy with respect to adopting recommendations for clinical preventive services. A national set of guidelines for clinical preventive services is created at the plan’s systems-level headquarters and distributed to affiliated plans in regions throughout the country. The plan has a committee at the regional level that reviews the recommendations from the national group and approves them for adoption. Analysts examine evidence from the Task Force and other sources, essentially conducting a second screen of the supporting evidence for each clinical preventive service recommendation. The information is presented to the committee, approximately every two years (for every plan guideline). Physicians, nurses, and health plan staff participate in a meeting to review, and modify (if necessary) the national guidelines. Historically, recommendations were reviewed and adopted at the regional level only. The Director of Quality Improvement explained that the process changed over the past few years in order to set national standards for clinical preventive services. The new process enables the plan to retrain local control over its own guidelines. For example, while the closed-panel plan’s national group recommended that eligible men and women be screened for colorectal cancer every 5-10 years, the regional plan modified the recommendation to mandate screening every 5 years.

In contrast to the closed-panel plan, the governmental plan has the least degree of local autonomy with respect to adopting the recommendations for clinical preventive services. The government plan must integrate the clinical preventive services guidelines adopted by a national group at the plan’s headquarters office. Respondents from the government plan indicated that the local facilities have very little control over which recommendations are selected for integration and implementation. One Clinical Advisor from the plan indicated that it would be desirable to have a

guideline review process at the local level. Another Clinical Advisor described that leadership from the local level of the governmental plan participates in the national level process of reviewing and adopting recommendations. According to a high-ranking director at the national headquarters office, the governmental system reviews recommendations from professional groups and specialty societies to develop system-wide guidelines.

The hybrid plan, while also part of a larger health system, reviews and adopts clinical preventive services recommendations at the plan level. The process incorporates the input of physicians that are plan-affiliated employees as well as physicians that are contractors. A quality committee and several subgroups at the plan level meet regularly to review and adopt recommendations for clinical preventive services. The hybrid plan's Clinical Advisors discussed that the plan looks for the best evidence, selecting recommendations that are ranked or rated in a manner similar to the Task Force. The plan consults a range of recommendations from various specialty societies, sometimes using the Task Force's recommendations and other times adopting recommendations from other organizations such as the American Cancer Society or the American Radiological Society.

Finally, the open-panel plan's process for reviewing and adopting clinical preventive services recommendations occurs at the plan level only. The Director of Quality Improvement indicated that the plan's medical policy department researches recommendations for approximately 450-500 "medical policies," which include those for clinical preventive services. An evidence-based approach is employed, whereby recommendations must meet five basic criteria: (1) the service must have final approval from the appropriate governmental regulatory body; (2) scientific evidence must permit conclusions concerning the effect of the service on health outcomes; (3) the service must improve net health outcomes; (4) the service must be as beneficial as any established alternative; and (5) improvement must be attainable outside the investigational setting. The medical policies are reviewed at a regional advisory board meeting by panels of contracted clinical staff. Then, the medical policies are reviewed and adopted by the medical policy review committee which includes staff from all major departments of the health plan (e.g., reimbursement, information systems, networking). The plan's medical policies are reevaluated every three years, or earlier if scientific evidence merits a change.

The Role of Expert Opinion and Consensus-Based Decision-Making. We asked respondents to elaborate on the reasons or criteria used to select which recommendations will be integrated. While all of the plans used a highly evidence-based methodology where various committee structures reviewed clinical preventive services recommendations from the Task Force and other sources, we found that expert opinion and group consensus decision-making are two other influences that impact the selection of recommendations.

The closed-panel plan is striving to employ a more evidence-based approach to its review and adoption process for clinical preventive services. However, according to respondents, the process is still heavily influenced by practice patterns and expert opinion. For example, in the closed-panel plan, "Clinical Thought Leaders"⁵⁷ – primary care physicians and clinicians who work for the health plan and have a particular area of clinical expertise – have significant influence over which CPS recommendations are adopted for delivery at the plan. For example, if organizations are not in agreement on a recommendation for a particular preventive service, the Clinical Thought Leaders are primarily responsible for making the decision about adoption and integration. Respondents from the plan indicated that these physicians and clinicians play a large role in the adoption of the recommendations.

In the open-panel plan, while the process is primarily evidence-based, the plan has incorporated experts into its process for policies that are early in development. A Director of Quality Improvement indicated that the medical policy and research departments have involved external expert consultants or academic physicians to review new policy issues. In the past, the open-panel plan has also used a consensus-based process to decide whether or not to adopt a clinical preventive service recommendation as a medical policy. A Director of Quality Improvement indicated that while the plan has tried a consensus process in the past, the process was “fairly expensive” and has only been done “on occasion.”

The hybrid plan’s Clinical Advisors indicated that the plan rarely incorporates expert opinion into its process for selecting clinical preventive services recommendations. The respondents described that the plan tries to only incorporate recommendations that have “level one” evidence, describing the quality of these recommendations as similar to the Task Force’s “A” and “B” recommendations. However, the Clinical Advisors described that the plan will implement recommendations based on expert opinion if “it’s appropriate for patients in their situations.”

Respondents from the governmental plan indicated that they have very little control over the adoption of recommendations for clinical preventive services, as this process is purely orchestrated at their system headquarters. The Director of Quality Improvement for the governmental plan indicated that at the local level “we don’t have a lot of control over [the process used to review and adopt recommendations]. This is a national determination, and then [the recommendations] roll down to the facility level. I’m not sure of what process they would use to adopt or reject or table certain types of recommendations.” As a result, it is unclear how large of a role expert opinion and consensus-based decision-making play in the process used by the governmental plan.

The Role of the USPSTF Recommendations. The USPSTF recommendations play an important role in the process that health plans use to develop and adopt their own health plan recommendations/guidelines for clinical preventive services. For some plans, the Task Force recommendations are a primary source of information. A Director of Quality Improvement respondent for the open-panel plan indicated that the USPSTF recommendations are “the biggest source” of recommendations used for clinical preventive services.

A Director of Quality Improvement at the hybrid plan discussed that the Task Force recommendations are important to the plan because they are “purely evidence-based” and “unbiased,” in comparison to other sources. A respondent from the closed-panel plan indicated that the process for adopting CPS recommendations from the Task Force is “easier” than from other specialty societies because the closed-panel plan uses a similar grading methodology to integrate its recommendations. The Director of Quality Improvement at the closed-panel plan also explained that if the national group does not have a guideline for a particular clinical preventive service, then the USPSTF recommendation is considered for adoption.

One Task Force recommendation in particular that has had a large impact on practice patterns at the closed-panel and hybrid plans: the “I” recommendation for protein specific antigen (PSA) testing for prostate cancer. The closed-panel, governmental, and hybrid plans stopped routinely delivering the PSA tests for prostate cancer as a result of the USPSTF “I” recommendation.⁵⁸ The Task Force concluded that the evidence was insufficient to recommend for or against routinely providing the PSA test to screen for prostate cancer. A Director of Quality Improvement from the hybrid plan indicated that “the PSA test is one that we’ve actually sided with the USPSTF as opposed to the American Urological Association and the American Cancer Society when we put out recommendations to members. We tell members that you really need to talk to your doctor about

this because you've heard [the PSA test] is the right thing to do but it may or may not be.” A Clinical Advisor respondent from the closed-panel plan also indicated that the plan stopped its protein specific antigen (PSA) testing on a regular basis for prostate cancer. However, this respondent did not indicate that this decision was due to the USPSTF's “I” recommendation.

Respondents from the closed-panel plan also suggested that the plan has decreased its frequency of cervical cytology because of the USPSTF recommendation.⁴ The plan now screens patients every three years (after two or three cytologically normal tests), in accordance with the Task Force's “A” recommendation.

It should be noted that while the Task Force recommendations do play a key role in the process that plans use to review and adopt recommendations for clinical preventive services, the health plans also consult a wide range of other sources, such as the National Cancer Society and other specialty societies and associations (to be described in more detail in Section 2.6 “Competing Recommendations”). One Clinical Advisor from the closed-panel plan indicated that “we do not review [the USPSTF] information and say, ‘the Task Force recommendation is this, we’re going to go implement it.’ The Task Force is one source – albeit a powerful source – among sources we review. None of our recommendations are purely informed by Task Force [recommendations]. It’s just one source of information.” Thus, while the USPSTF recommendations play an important role in the process that health plans use to develop their own guidelines, respondents suggested that other factors also affect the adoption and integration of the recommendations.

1.3 Accessing the USPSTF Recommendations

Our conversations with respondents suggest that few health plan staff regularly access the USPSTF recommendations for updates. Less than one quarter of respondents indicated that they regularly check for updated evidence and recommendations from the Task Force. Directors of Quality Improvement were most likely to check for updated evidence and recommendations.

Conversely, almost 52% of participants indicated that they do *not* check for updated evidence from the USPSTF (22 out of 42). Clinical Advisors discussed that they do not usually check for updated evidence and recommendations from the Task Force because they are overburdened and face competing priorities. Given onerous patient care responsibilities, one Clinical Advisor indicated that it is difficult to find the time to “see what the newest thing is [in terms of preventive health recommendations].” Another Clinical Advisor indicated that he/she does not check for updated evidence from the Task Force because it is “outside [his/her] role.”

While few health plan staff regularly access the USPSTF recommendations, it appears that people may be strategically consulting the USPSTF recommendations on several occasions. Clinical Advisors described that they may check for updated evidence from the Task Force when (1) the health plan is reviewing or updating its own CPS recommendations or (2) the health plan is launching a quality improvement program or other initiative that focuses on improving the delivery of one particular recommendation. Other respondents suggested that their health plan will consult the USPSTF when new recommendations for clinical preventive services are evolving or have been released (e.g. obesity). Additionally, respondents indicated that they may consult the USPSTF if a clinical preventive service becomes highly controversial, enters the public spotlight, or needs to be reevaluated in light of new scientific findings.

⁴ The USPSTF found no direct evidence that annual screening achieves better outcomes than screening every 3 years.

In order to learn more about the users of the USPSTF recommendations, we asked respondents to describe the primary target audience for the recommendations at their health plan. Specifically, we asked: “Who is the primary target audience within your health system for information about recommendations from the Task Force? In other words, when the Task Force disseminates new information about the recommendations, who should they contact at your system?” Health plan respondents identified a number of users of the USPSTF recommendations. A complete list is provided in Exhibit 9 below.

Exhibit 9: Users of the USPSTF Recommendations

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Medical Directors and Chiefs of Staff ▪ Directors of Quality Improvement and Performance Improvement ▪ Quality Improvement Staff ▪ Primary Care Physicians ▪ Nurse Practitioners | <ul style="list-style-type: none"> ▪ Staff of CPS Recommendations Committees ▪ Staff of Medical Policy Departments ▪ Performance Improvement Committees ▪ Plan Leadership (at the systems-level or central office headquarters) ▪ Members |
|--|--|

Overall, we found that the Director of Quality Improvement and Quality Improvement Department were cited most often as the primary target audience of the USPSTF recommendations. Medical directors and plan leadership at the systems-level or central office headquarters were also mentioned frequently. The latter was particularly relevant to the governmental plan, which is a local facility that operates within a larger governmental system.

Interestingly, while many of the products and tools produced by the Task Force are intended for use by clinicians and other providers of health care, we found that only 9 out of the 41 respondents (22%) mentioned clinicians as a primary target audience within their health plan for information about recommendations from the Task Force.⁵ Interestingly, few respondents perceived clinicians as an important target audience for the USPSTF recommendations, suggesting a need for further dissemination of the recommendations to this group.

II. Integration and Delivery of the USPSTF Recommendations in Health Plans

2.1 Incorporating the USPSTF Recommendations into Practice

Delivery of the “A” and “B” USPSTF Recommendations. The USPSTF recommends that clinicians discuss the “A” and “B” recommendations with eligible patients and recommend them as a priority. According to the USPSTF, the “A” and “B” grades demonstrate that there is good or fair evidence that the service improves important health outcomes and concludes that benefits substantially outweigh harms. Respondents in each of the four plans were asked: “Are all or some of the services that are recommended by the Task Force, the “A” and “B” recommendations, being delivered throughout your health plan?”

Conversations with respondents indicated that the perception is that many of the “A” and “B” recommendations are being delivered in the health plans. The plans offer many, though not all, of the “A” and “B” recommendations to members. Additionally, many, though not all of the “A” and

⁵ The sample size for this question is 41 respondents rather than 42. An expert interview was conducted with a senior-level manager at the governmental plan’s system headquarters. The respondent was not asked this question.

“B” recommendations are being integrated into each of the plans’ clinical recommendations (discussed further in the section entitled “Integration of the USPSTF Recommendations”). Though we cannot determine whether the recommendations are being delivered in practice, respondents indicated that the “A” and “B” recommendations are a priority at their health plans.

Some respondents had difficulty commenting on the delivery of the recommendations because they were unfamiliar with which clinical preventive services recommendations are “A” and “B” recommendations. Others did not recognize the USPSTF grading scheme at all.

Another notable finding is that respondents indicated that some of the “A” and “B” recommendations are being delivered across health plans, but not due to the fact that they are highly recommended by the USPSTF. In the case of the hybrid plan, respondents suggested that several “A” and “B” recommendations are being delivered because they coincide with the National Committee on Quality Assurance (NCQA)’s Health Plan Employer Data and Information Set (HEDIS) measures. At the governmental plan, the “A” and “B” recommendations are being delivered because these recommendations were integrated into the plan’s overall medical policy manual of performance measures. Interestingly, no respondents indicated that the “A” and “B” recommendations are being delivered because the USPSTF found good or fair evidence that the service improves important health outcomes and concludes that benefits substantially outweigh harms.

Our discussions about the delivery of the recommendations in each of the plans are discussed in greater detail below.⁵⁹

Open-Panel Plan. Our interviews with open-panel plan respondents indicate that the perception is that some of the “A” and “B” recommendations for clinical preventive services are being delivered throughout the plan. The Medical Director for the plan answered that “as far as he/she knows, all of the “A” and “B” recommendations are being delivered. Several of the respondents had never heard of the “A” and “B” recommendations, including a Director of Quality Improvement. Other respondents from the open-panel plan indicated that the “A” and “B” USPSTF recommendations are “used sometimes” but could not comment on delivery.

Another Director of Quality Improvement from the plan could not say with certainty whether all or some of the recommendations were being delivered, but did provide us with prevention materials that reference the USPSTF Guide for Clinical Preventive Services, 2006. Through further review of the plan’s prevention materials, located on the plan’s website, we found that the open-panel plan’s “Guide to Preventive Health Services” is the USPSTF Guide for Clinical Preventive Services, 2006. The plan provides a direct link to the USPSTF recommendations. This suggests that all of the USPSTF recommendations are made available and offered by the plan, though the level of delivery of the recommendations is less clear.

Closed-Panel Plan. Respondents from the closed-panel plan indicated that some, but not all, of the USPSTF’s “A” and “B” recommendations are being delivered. Only one respondent, a Director of Quality Improvement, indicated that the vast majority of the “A” and “B” recommendations are being delivered. In fact, this respondent told us that the plan “basically adopted the USPSTF recommendations.” At least six of the 12 respondents interviewed at the closed-panel plan said that some or most of the USPSTF recommendations are being delivered. Interestingly, other respondents were less certain about whether the recommendations are being delivered. Since the closed-panel plan has its own methodology for reviewing and adopting clinical preventive services recommendations, some respondents were unsure of whether the “A” and “B” recommendations aligned with the plan’s guidelines. For example, several Directors of Quality Improvement and

Clinical Advisors indicated that most, though not all, of the “A” and “B” recommendations are being delivered.

Hybrid Plan. According to the Director of Quality Improvement at the hybrid plan, all of the “A” and “B” recommendations are being offered to members; however, it is likely that only a certain subset are actually being delivered. At the hybrid plan, providers are only held accountable for the delivery of recommendations that are measured by the NCQA. Specifically, the Director of Quality Improvement at the hybrid plan indicated that many of the “A” and “B” USPSTF recommendations are being delivered because they overlap with HEDIS specifications. Providers at the hybrid plan are strongly incentivized to score well on the HEDIS measures, and as a result, only certain recommendations are a priority for the plan. Respondents provided several examples of “A” and “B” recommendations that are being delivered, including screenings for breast cancer screening, cervical cancer, colorectal cancer, and diabetes as well as adolescent and childhood immunizations. These services are also measured by HEDIS. Quality improvement staff indicated that the “A” and “B” recommendations that overlap with HEDIS specifications are being systematically implemented and measured. However, it is difficult to ascertain how many of the other “A” and “B” recommendations from the USPSTF are being implemented and measured, since providers are not held accountable for other recommendations. A Clinical Advisor at the hybrid plan estimated that many, but not all, of the “A” and “B” recommendations are being delivered.

Governmental Plan. Similar to the other plans, our conversations with respondents indicate that the perception is that the some of the “A” and “B” recommendations are being delivered. The Director of Quality Improvement for the plan was unfamiliar with the USPSTF’s grading methodology, and could not comment on delivery. Similarly, two of the three Clinical Advisors and a Quality Improvement Staff member were unfamiliar with the USPSTF recommendations and the grading methodology. The majority of the respondents indicated that they were more familiar with the guideline terminology used by the governmental plan. One Clinical Advisor explained that the governmental plan develops its own highly sophisticated manual of performance measures, which incorporates many of the “A” and “B” USPSTF recommendations. The manual also draws from other sources of clinical preventive services recommendations. This may partly explain why the majority of the respondents from the governmental plan were unfamiliar with the USPSTF’s “A” and “B” grading methodology. A Clinical Advisor and Quality Improvement Staff member provided a few examples of performance measures that coincide with the “A” and “B” recommendations: screenings for cervical cancer, breast cancer, colon cancer, and hypertension. Finally, one respondent said that the plan incorporates the “A” and “B” recommendations as much as possible.

Integration of the USPSTF Recommendations. In order to explore how the health plans integrate the USPSTF recommendations, we asked respondents: “Can you provide a few examples of how the recommendations are integrated?” We received a number of responses to this question. Three of the most common themes are presented in Exhibit 10 and discussed below.

Exhibit 10: Integration of USPSTF Recommendations

Means of Integration	Open-Panel Plan	Closed-Panel Plan	Hybrid Plan	Governmental Plan
1. Integrated into CPS manuals, measures, and publications	■	■	■	■
2. Integrated via health IT	■	■	■	■
3. Integrated into patient health education materials		■	■	

1. The USPSTF recommendations are integrated in health plan provider manuals on clinical preventive services, performance measures, and/or other publications.

- *Health plan provider manuals.* The open-panel plan integrates the USPSTF recommendations into its system by posting a direct link to the USPSTF recommendations for providers. The link is accessible when providers click on “Preventive Health: Guide of Clinical Preventive Services” and directs the provider to AHRQ’s pocket guide of USPSTF recommendations (<http://www.ahrq.gov/clinic/pocketgd.htm>). The open-panel plan also posted an electronic memo to providers that the plan “has adopted the Guide to Clinical Preventive Services, 2005 as [its] recommended best practice reference for clinical preventive services.” The memo discusses that the plan “has created a direct link from [its] Web site... to be both convenient and helpful to [providers] in caring for [their] patients.” The memo also explains that the publication was developed by the USPSTF as part of an AHRQ initiative, and is endorsed by the U.S. Department of Health and Human Services, the Public Health Service, the Office of Public Health and Science, and the Office of Disease Prevention and Health Promotion. In addition to the direct link to the recommendations, the open-panel plan posts an in-house phone extension for providers to call for copies of the USPSTF pocket guide.
- *Health plan manuals of performance measures.* The governmental plan produces a provider manual of performance measures that incorporate clinical preventive services. The USPSTF recommendations for influenza immunization, pneumococcal immunizations, breast cancer screening, cervical cancer screening, and colon cancer screening are integrated into the manual. For each of the USPSTF recommendations, the manual directly references the Task Force, providing a link to AHRQ’s USPSTF website. The manual also contains a general discussion of the evidence supporting the USPSTF recommendations.
- *Health plan publications.* The closed-panel plan integrates the USPSTF recommendations into its quarterly journal publication for physicians and nurses. The Task Force is often referenced by the journal publication. References to the Task Force appear to begin in 2001, particularly within articles that address preventive health. Examples of USPSTF recommendations cited by the journal in recent publications include chemoprevention of breast cancer (2005 issue), screenings for major depression (2004 issue), and weight management (2003 issue).

2. The USPSTF recommendations are integrated electronically using health information technology tools such as electronic medical records (EMR), clinical reminders, and order sets for clinicians.

The closed-panel plan, hybrid plan, and government plan integrate the USPSTF recommendations into their EMRs. The open-panel plan is less advanced in terms of its ability to integrate the CPS recommendations using health IT, as it currently does not have an EMR. The closed-plan, in particular, has a sophisticated EMR that integrates the USPSTF recommendations, such as mammography screening for breast cancer, and prompts physicians to recommend the service for eligible patients. The closed panel plan's EMR also has a clinical reminder application which prompts providers to deliver the appropriate screenings for patients. The governmental plan integrates clinical reminders and the hybrid plan utilizes order sets, a clinical decision support tool.

3. The USPSTF recommendations are incorporated into the plan's patient health education materials that are distributed to the member population.

The hybrid plan utilized the USPSTF recommendations to inform the development of patient education materials distributed to the member population. The plan publishes a manual called "Preventive Health Guidelines for Members," which presents a series of clinical preventive services recommendations for members. The booklet was developed with input from the hybrid plan's participating providers, and based on recommendations from the USPSTF, the American Academy of Family Physicians, the American Academy of Pediatrics, and the Centers for Disease Control. The booklet presents clinical preventive services recommendations in three phases: birth-18 years, 19-64 years, and pregnancy. Adults 65 and older are covered in a separate manual. The booklet also provides recommendations related to all populations such as injury prevention, use of tobacco, alcohol, and other drugs, sexual behavioral, and managing diseases. The recommendations are presented in a concise manner for members. Furthermore, the booklet also discusses that the recommendations may not always be covered benefits, and therefore, the information should be discussed further with their providers.

2.2 Major Uses of Health Information Technology

Health IT plays a key role in the integration and delivery of clinical preventive services recommendations. For the purposes of this evaluation "information technology" is defined as: "The wide range of electronic devices and tools used to acquire, record, store, transfer, or transform data or information."⁶⁰ A robust body of empirical research suggests that health IT, and more specifically, clinical decision support systems, have the potential to significantly affect the cost, quality, efficiency, and safety of health care delivery."^{61,62} Our interviews confirm the relevance of clinical decision support systems in health plans that implement clinical preventive services recommendations. Health plans use EMRs, clinical reminders, and other health information technology tools such as order sets to not only integrate and deliver the USPSTF recommendations, but also track and monitor the data for quality improvement purposes.

This section examines how health plans have used health IT to integrate and deliver clinical preventive services. We asked a series of questions on health IT and quality improvement to Directors of Health IT, Directors of Quality Improvement, Health IT Staff, Quality Improvement Staff, and Clinical Advisors. This section begins with a discussion of how health IT is utilized for clinical preventive services integration, specifically focusing on EMRs clinical reminders, and order sets.

Using Health IT to Integrate the USPSTF Recommendations. Each of the health plans uses health IT to integrate the USPSTF recommendations though their sophistication varies considerably. We asked respondents: "Can you provide some examples of how the Task Force recommendations are integrated into your health IT systems?" We also asked (1) whether the health plan provides clinical

decision support systems to physician members to support the delivery of the Task Force recommendations and (2) whether the plan has an EMR.

We found that health plans used health IT in similar ways to integrate the Task Force recommendations. However, the plans had differing capacities to use health IT. Governmental and closed-panel systems, where providers are employees of the plan, had the greatest integration of Task Force recommendations using health IT, followed by the hybrid system (in which approximately half of plan members access services through plan-affiliated providers and half through contracted providers). Finally, the open-panel system, which contracts with providers who may provide services under several health plans, had the least integration of the Task Force recommendations using health IT.

To explore these trends further, we briefly discuss the use of four key health IT tools: electronic medical records, community health records, clinical reminders, and order sets.

Electronic Medical Records. The majority of the health plans used EMRs, which are defined as “databases (or repositories) that contain the health information for patients within a given institution or organization.”⁶³ EMRs contain the aggregated datasets gathered from a variety of clinical processes. Examples of data included are laboratory data, pharmacy data, patient registration data, radiology data, surgical procedures, clinic and inpatient notes, preventive care delivery, emergency department visits, and billing information.⁶⁴ Given that EMRs are purchased and utilized by health providers and provider networks, the integration of the Task Force recommendations into the EMRs varied greatly by type of health plan.

Governmental and closed-panel systems, where providers are employees of the plan, had the greatest integration. The governmental plan has a highly sophisticated EMR which enables providers to access records across the country through a remote process. The hybrid plan, in which approximately half of plan members access services through plan-affiliated providers, integrates Task Force recommendations into its EMR, but the scope is more limited as contracted providers (who provide services to members of multiple health plans) may not use the EMR. As a result, integration is less consistent, reaching only those members who seek services from plan-affiliated providers. A further complication is that some services are likely to be captured within the EMR, while others are not depending upon where the service is obtained (e.g., when a member seeks specialty care it may or may not be with a plan affiliated provider and as a result may or may not be captured). The open-panel system, which allows private physicians to contract with multiple health plans, does not currently have an EMR. The open-health plan is in the process of implementing a patient-centered community health record, which will enable providers to view patient health records and lab tests electronically.

Patient-Centered Community Health Record. A patient-centered community health record (CHR) allows multiple health care providers treating the same patient to view that patient's medical information via a secure Web site on the Internet. The CHR is different from an EMR because it connects health care providers to a centralized and secure source of patient information. The open-panel plan is in the process of implementing a CHR which will provide an electronic reserve of health care information for all members covered by the plan. Open-panel providers will be able to use the CHR to see member claims data, lab information, prescription drug information, and immunizations.

Clinical reminders. A clinical reminder is a clinical decision support application that can act on data in the EMR. Clinical reminders are one of many support features that makes relevant information available for clinical decision-making. Specifically, clinical reminders support the provision of preventive services by prompting providers to deliver recommended preventive services to eligible

patients. For example, assuming a patient is a female 40 years old or older, the EMR would prompt the physician that the patient is a candidate for mammography.

The governmental plan and the closed-panel plans use clinical reminders to support the delivery of preventive services from the Task Force. Traditionally, clinical reminders have been primarily mailed or faxed to providers. Today, the governmental and closed-panel plans have the ability to integrate clinical reminders directly into their EMRs, in effect, notifying plan providers at the point of service. A Clinical Advisor from the closed-panel plan indicated that “we use lots of alerts around preventive care – especially for clinical preventive services.” Quality Improvement Staff members from the closed-panel plan indicated that electronic reminders are an important and useful tool for tracking the delivery of clinical preventive services: “From a practice-level, electronic reminders have helped teams and providers to realize all of the struggles they faced with manual tracking. They recognize how easy it is to lose things if they just write it down on a piece of paper.”

The closed-panel plan is planning to implement clinical reminders for all of its recommended clinical preventive services. The governmental plan utilizes clinical reminders for physicians and nursing staff. For example, a Health IT Staff member indicated that certain clinical reminders target nurses, while others target social workers. While the hybrid plan has an EMR, the plan has limited ability to integrate clinical reminders for preventive services. The open-panel plan does not use clinical reminders. According to the Director of Health IT for the open-panel plan: “Other than the physician looking up and seeing that a service hasn’t been performed, the system doesn’t remind them.”

Order Sets. The hybrid plan utilizes order sets, an electronic clinical decision support tool that can be directly integrated into the EMR. Order sets contain typical orders associated with clinical conditions. For example, for a particular clinical condition, an order set contains diagnosis information, relevant documentation, clinical orders, and patient instructions, follow-up and level of service information. Order sets are used widely at the hybrid plan. According to one respondent: “Doctors can go in to the [order sets] and it brings up a list of orders or a list of questions they need to ask and answer based on diagnoses. It drives the decision-making.” Order sets are not to be confused with clinical reminders, as the order set does not prompt the physician to provide a service through the EMR (e.g. mammography). Currently the plan does not operate order sets for all of its clinical preventive services recommendations.

2.3 Major Uses of Quality Improvement

Quality improvement activities are employed at each of the health plans to increase the appropriate delivery of clinical preventive services. Quality improvement activities are an important priority at each health plan – providing quality improvement staff and plan leadership with an opportunity to work closely with practitioners to improve patient care. One Clinical Advisor from the closed-panel plan indicated that “[quality improvement] is all we do. Every day is about trying to pick a priority and make it happen.”

This section will present our findings on quality improvement. We begin with a discussion of how health plans use data to measure and monitor the delivery of clinical preventive services. Second, we discuss the challenges that health plans face with regard to using data for quality improvement purposes. Third, we move on to a discussion of different types of quality improvement activities, and specifically how these activities have been used to increase the delivery of Task Force recommendations. Finally, we address how plans encourage implementation of quality improvement activities at the practice and clinician levels.

Measuring and Monitoring the Delivery of Clinical Preventive Services. Health plans utilize their health IT tools to measure and monitor the delivery of clinical preventive services for quality improvement purposes. When members of the clinical staff deliver clinical preventive services to patients, a record of the service is integrated into the health plan's EMR or data monitoring system. Data are recorded in the EMR or data monitoring system regardless of whether a provider, nurse, or social worker provided the service.

Plans collect data on test results, lab screenings, delivery rates of clinical preventive services, claims data, and pharmacy data; data on compliant and non-compliant members with respect to various clinical preventive services; quality data for HEDIS; and administrative codes such as current procedural terminology (CPT) codes and the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9) codes.

Health plans evaluate the data frequently to determine whether it will be necessary to develop a quality improvement activity to increase the delivery of a clinical preventive service. Typically, health plans evaluate their data quarterly because of HEDIS reporting. Collecting and evaluating data for HEDIS measures is a particularly important priority for all of the plans. A Quality Improvement Staff member from the hybrid plan said that “the HEDIS measures get the most attention” in terms of quality improvement data.

Each of the four plans we spoke with also evaluate their data internally on a monthly basis. The closed-panel plan and governmental plan indicated that physicians' performance on certain measures is evaluated on a weekly basis to prompt further action when necessary. One Quality Improvement Staff member from the closed-panel plan discussed that the plan sets up reports each week for colorectal cancer screenings: “We set up a report every week to capture fall out for colorectal cancer screening, for example. We set it up so that the positive fecal occult blood test results would be flagged [in the EMR]. I would take that data and do chart reviews, and then provide the data to clinics so that they can follow up.” The closed-panel plan utilizes these reviews as an opportunity to evaluate the data available for quality improvement purposes.

Staff acknowledge the importance of prioritizing quality improvement efforts for clinical preventive services. A Director of Quality Improvement at the governmental plan indicated that when there is a hot topic or a new clinical preventive service recommendation at the national level, some measures may be evaluated more frequently: “We have so many measures; we can't be monitoring everything.”

Challenges with Using Data for Quality Improvement Purposes. Health plans measure and monitor data for a variety of clinical preventive services in order to assess performance and direct future quality improvement efforts. However, respondents from all of the plans described that using data for quality improvement purposes can be challenging for a variety of reasons. We asked respondents to describe the challenges they face in gathering and using data for quality improvement purposes. From claims lags and coding problems to data quality and tracking issues, health plans raised a variety of important issues that associated with using clinical preventive services data for quality improvement purposes. We discuss these challenges below and provide examples from health plans, when appropriate:

- *Claims lag.* Respondents indicated that a key source of data for measuring the appropriate delivery of clinical preventive services is their system's claims remittance data. One challenge cited was identifying whether a clinical preventive service recommendation was actually performed due to claims lag. Respondents described that a lag time exists between when a patient is seen by a provider and the subsequent time required for the claim to be processed,

paid, and available as data. Respondents described that it is sometimes difficult to know when a patient actually received a clinical preventive service. For example, during a follow-up visit with a patient, a provider may be unaware that the patient had received a service up to two months before.

- *Coding detail.* Several respondents that have a strong familiarity with coding and reimbursement described the difficulties associated with coding detail. One key challenge described is posed by the lack of detail available in CPT and ICD-9 codes for classifying diagnoses and services. Specifically, the lack of a “not applicable” code was mentioned, as was the lack of codes going to the “fourth or fifth digit” (to provide greater diagnostic detail). In addition, some clinical preventive services do not have specific codes for health plans to track performance. The Health IT Director from the closed-panel plan used diabetic foot exam as an example of a service that is highly difficult to track due to coding detail issues. In addition, another issue is that multiple codes are used to measure similar preventive services. This lack of consensus is problematic for Health IT Directors and Staff who measure the delivery of these services. Overall, coding detail discrepancies are problematic because they reduce the validity of the data.
- *Unprocessed claims.* If a claim is not processed due to any number of factors, the information systems do not capture the fact that the service was delivered to the patient.
- *Inaccurate coding.* If coding is inaccurate (e.g., an incorrect diagnostic code was used on a previous patient visit) the patient may be inaccurately classified and therefore excluded from the delivery of important clinical preventive services in the future.
- *Medical records data.* The open-panel plan respondents discussed that the plan relies on claims data for quality improvement purposes since the plan does not have accessible medical record data. This is a key challenge because there may be some limits to the use of claims data for quality improvement purposes.
- *Incomplete patient records.* For the open-panel plan and the hybrid plan, incomplete patient records pose problems for monitoring the delivery of clinical preventive services. Members of these plans may receive services from non-affiliated providers, and the record of such services is never transmitted back to the plans and/or integrated into the plans EMR. Even in the closed-panel plan, where almost all of the members receive services from plan-employed providers, recordkeeping is an issue. A Clinical Advisor from the closed-panel plan described that “if people get their mammograms outside the system or medicines somewhere else, we have incomplete data.”
- *Counseling recommendations data.* Respondents indicated that the quality of the data collected for counseling recommendations is problematic for a variety of reasons. First, counseling recommendations are more difficult to integrate into the EMR because many are not associated with discrete codes. Second, data from counseling recommendations is more difficult to collect because of its subjective nature (in contrast to data for lab tests). Third, as a Director of Quality Improvement from the closed-panel plan indicated, providers often forget or choose not to document that a counseling service was provided to a patient: “Physicians are salaried so they are not acutely aware of coding issues. They tell someone not to smoke, but unless you enter that you counseled for smoking as part of your encounter, you don’t get credit for it.” Finally, often counseling recommendations are not easily integrated into health plan EMRs because not all counseling recommendations result in claims. For example, tobacco use counseling is particularly problematic; one hybrid plan

respondent indicated that a physician or nurse may counsel a patient over the phone about tobacco use, but often, the service does not result in a claim. As a result, the health plan is not able to capture that the counseling service was delivered.

- *Using data to inform quality improvement.* Using data to drive quality improvement activities is a key challenge. Balancing the cost-benefit equation for certain services is an issue that health plan staff identified as a key issue. Respondents from the closed-panel plan discussed that there are challenges to identifying whether a service will result in a large or incremental quality improvement for members.
- *Claims systems integration.* In the hybrid plan, the health plan uses multiple separate systems for claims data. One respondent indicated that the plan uses 13 different data sources. Pharmacy and medical claims are separated into two different systems. Similarly, mental health service data is delegated to another system. It is difficult for the various external entities to put the data together in a similar format, in order to bridge the separate claims systems. The different sources and different data formats pose problems for Health IT and Quality Improvement Staff as well.
- *Evaluating patient outcomes.* Currently, none of the plans have the capacity to evaluate patient outcomes relative to the delivery of recommended clinical preventive services. The closed-panel plan, which has the greatest integration of clinical preventive services using Health IT is not currently able to evaluate patient outcomes, but is moving in that direction. To measure patient outcomes relative to clinical preventive services, the hybrid plan uses an NCQA tool that allows the health plan to predict patient outcomes based on clinical preventive services delivery, while also taking into account population characteristics and other information.
- *Tracking patient data.* Quality Improvement Staff from the hybrid plan discussed the unique challenges associated with tracking patient outcomes over the long-term in a hybrid plan. One respondent told us that “when you are talking about [clinical preventive] services that are going to have an impact down the road, we struggle with whether the data will be there.” When members receive services from plan-affiliated providers who utilize the system-based EMR, it is easier for quality improvement staff to track patient outcomes. However, the Quality Improvement Staff noted that the hybrid plan’s members often change primary care physicians. Since about 50% of providers do not use the system EMR, patient data may or may not be recorded and available, making it difficult for the health plan to monitor long run trends.
- *Member turnover.* The challenging of tracking patient data for quality improvement is further exacerbated by member turnover. Employers frequently shift health plans to secure better rates and health plan members may change jobs, resulting in member turnover. According to Quality Improvement Staff at the hybrid plan: “It’s easy if [members] stay in the health plan; that’s not as much of a problem. Sometimes they fade in and out.” As a result, plans face serious challenges tracking and monitoring patient outcomes over the long-term.

Quality Improvement Activities. Health plans are engaged in practice change and quality improvement activities, specifically related to clinical preventive services. According to respondents, health plans have implemented quality improvement activities to increase the delivery of screenings for colorectal cancer, cervical cancer, and breast cancer, and to improve the delivery of tobacco cessation counseling and flu immunizations. Health plans employ a variety of quality improvement techniques, many of which integrate health information technology.

To explore the major uses of quality improvement at health plans, we asked respondents a series of questions focused on the types of quality improvement activities that improve the delivery of clinical preventive services. We also examined whether quality improvement activities are used to increase the delivery of Task Force recommendations, specifically:

- Is your system engaged in practice change or continuous quality improvement activities?
- Can you provide a few examples of activities that were designed to increase the appropriate delivery of a Task Force recommendation?
- When [the health plan] designs a practice change or continuous quality improvement activity to increase the appropriate delivery of a Task Force recommendation, how do you encourage implementation at the practice or clinician level?

The governmental plan has been using quality improvement activities to increase the delivery of screenings for colorectal cancer and breast cancer as well as tobacco counseling, all of which are Task Force recommendations. The open-panel plan has a variety of quality improvement activities focused on increasing the delivery of Task Force recommendations such as flu immunizations, breast cancer screenings (mammography), and other immunization programs. The open-panel plan also focuses on addressing process improvement issues related to medical recordkeeping practices and provider accessibility to members. The hybrid plan has developed a sophisticated quality improvement program to increase the delivery of colorectal cancer screenings to plan members.

The closed-panel plan is particularly sophisticated in its quality improvement techniques for clinical preventive services. According to a Director of Quality Improvement, the closed-panel plan follows the chronic care model:

“From the clinician end, we do everything from newsletters, emails, and posters to electronic reminders in our medical record. We have brochures and flyers around the office, depending on the issue. We have lists of people who are overdue for their mammograms, which are sent to radiology staff and technicians that actually call people and remind them they are overdue.”

The closed-panel plan also orchestrates a variety of aggressive quality improvement campaigns to improve the delivery of clinical preventive services – some of which are publicized via nationwide television commercials. According to Clinical Advisors, the closed-panel plan’s regional priorities for quality improvement are mammograms and diabetes care; secondary priorities are asthma, immunizations, and coronary heart disease. Recently the plan also won a national award for controlling hypertension.

The health plans have implemented a wide range of quality improvement activities focused on improving delivery rates of clinical preventive services. A sample of common techniques is provided below.

- *Provider “report cards.”* The health plans use provider report cards to monitor physician performance with regard to the delivery of clinical preventive services. The open-panel plan conducts retrospective reviews of physicians’ delivery of CPS such as childhood immunizations (e.g., the immunization schedules are analyzed for children in various age brackets to determine whether appropriate immunizations are being delivered). The open-panel plan provides feedback to providers as part of its general medical record review audit. Feedback focuses on the delivery of childhood screenings, immunizations, and medical recordkeeping practices. The governmental plan has a performance improvement committee that examines whether individual practitioners are meeting performance

standards with respect to delivery of clinical preventive services. The closed-panel plan develops quality report cards, updated monthly, for every provider. According to one Clinical Advisor respondent from the closed-panel plan, the use of statins has increased as a result of communication and feedback resulting from the quality report cards. Another Clinical Advisor from the closed-panel plan indicated that “report cards” are a powerful quality improvement tool: “If it’s [a recommendation] that we agree with, we’ll put it on the report card for measurement, because that which is measured is that which is done.” A Director of Quality Improvement from the closed-panel plan further explained that “every participating physician gets a report card for measures. There are 20 measures on the report. If the provider is not on target, it’s red; if they are, it’s green. Everybody always wants to turn their red to green.”

- *Internal work groups and meetings targeted at improving performance on specific CPS measures.* The open-panel plan has a work group each year to improve the delivery of flu vaccinations. The work group focuses on developing newsletters, phone messages and other communications directed at increasing the number of members that get their flu shots each year. At the closed-panel plan, the quality improvement committees at each health center meet monthly to discuss ways to improve diabetes screening. Several of the tactics employed include distributing materials about the importance of screenings in each waiting room and posters in every other department to help raise awareness. Breast cancer screening is also a key priority for the plan, further described in Best Practices Box 1.

Best Practices Box 1: Improving the Delivery of Mammograms

Improving breast cancer screening rates is a regional priority for the closed-panel plan. In order to raise its delivery rate of mammograms from mid-70% to 80%, the plan developed a quality improvement effort targeted at its large urban population. One Clinical Advisor from the closed plan described that there are unique challenges to improving the delivery of mammograms in urban health care centers for its urban population: “We’ve been struggling with mammography. We want to get rates for centers like mine – the urban centers – up to or above 80%.”

The closed-panel plan uses a variety of quality improvement tactics to raise awareness of breast cancer in the urban population. Providers utilize every patient visit as an opportunity to communicate the importance of mammography. In addition, risk-stratified lists are developed and employed to perform aggressive outreach. According to a Clinical Advisor, the plan is determined to reduce the barriers to mammography for its urban population:

“We’ve talked about strategies like same-day mammograms. We’ve had women with breast cancer call women who are afraid to get mammograms to talk to them.” Providers are also providing additional outreach to the African-American population, identifying and addressing potential obstacles to mammograms: “There seems to be some bias in the African-American community against mammography and breast cancer screening. We look at obstacles: are they systemic, personal, transportation, fear? We try to reduce the obstacles, whether it’s a systems obstacle, logistical obstacle such as transportation, cost-related obstacle such as co-pays, or time constraints. We come up with strategies to address these obstacles.”

The medical centers also conduct activities related to improving delivery of breast cancer screenings. “We communicate the importance of mammography to members, to physicians, and give physicians reports of rates. We also use our EMR to provide clinical reminders.” The plan’s EMR alerts providers if members have not received their mammograms and then clinical assistants make outreach phone calls. The plan also has an automated system that makes outreach calls for breast cancer screening, as well as for prostate and colorectal cancer screenings.

- *Monitoring and compliance.* A Director of Quality Improvement for the open-panel plan indicated that the plan monitors compliance with quality guidelines.
- *External programs and campaigns.* The open-panel plan strives to increase the number of breast cancer screenings by communicating to providers and members through external programs. One of the programs offers incentives to members, such as an opportunity to register for a \$100 gift certificate drawing when members go for their mammography. The governmental plan set up flu clinics to encourage members to get immunizations and started a “Women’s Health Day” to improve breast cancer screening rates. The closed-panel plan mobilized a campaign targeted at reducing osteoporosis.
- *The Internet as a quality improvement and outreach tool.* The open-panel plan uses the Internet to promote preventive services to its members. The provider section of the website contains the provider manual, clinical newsletters, and provider feedback.
- *Patient outreach and education through letters, notices, and phone calls.* The open-panel plan’s Director of Health IT describes that quality improvement initiatives are directed at members rather than physicians: “We tend to concentrate more on the member side rather than the physician side regarding the Task Force recommendations. We think that the provider is likely to provide the screening if asked, but the first step is that the member needs to make the appointment to do it.” A Director of Quality Improvement for the open-panel plan discussed that notices are mailed to eligible members to get mammograms and Papanicolaou smears to screen for cervical cancer and breast cancer, respectively. In addition, the open-panel plan sends members newsletters to “market” clinical preventive services, such as flu immunizations, to the plan’s “customers.” At the hybrid plan, nursing staff on the quality improvement team call members who have not received their mammograms to schedule them for the exams. A specialized call center was developed at the hybrid plan to schedule patients for colonoscopies as well; this effort is further described in Best Practices Box 2. A Clinical Advisor respondent from the governmental plan described that the plan has significantly improved its process for scheduling colonoscopies; the plan’s quality improvement department calls eligible patients and follows up with letters.
- *Barrier analysis.* Quality Improvement Staff from the hybrid plan indicated that they engaged in barrier analysis based on the results of their projects: “We try to determine where we can make improvements. Is it an education issue with the members? Is it just a coding issue, based on claims? We’ll try to do that level of detailed analysis on the barriers and react to that.”
- *Member satisfaction surveys.* The open-panel plan actively provides member satisfaction surveys that draw upon member experiences with their providers, provider offices, and services. A member complaint system also investigates member complaints through a medical records audit.
- *Practice patterns analysis.* A Director of Health IT discussed that the open-panel plan currently conducts quarterly practice patterns analyses of physician performance on various measures, some of which are preventive health measures: “Based on the measure, if [the physician] is an outlier, we have somebody go out and have a conversation to try to figure out why.”

Best Practices Box 2: Improving the Delivery of Colorectal Cancer Screenings

Improving the delivery of colorectal cancer screenings is an important quality improvement priority for the hybrid plan. The plan's efforts had previously focused on the delivery of fecal occult blood testing to patients as the primary prevention method for colorectal cancer. However, according to Clinical Advisors from the plan, "we have not been very successful as an organization thus far [with regard to colorectal cancer screening]." The hybrid plan developed a multi-pronged quality improvement approach to improve the delivery of colorectal cancer screenings. Internally, the plan organized a team of internists, gastroenterologists, family physicians, nurse practitioners and managers to examine different recommendations for colorectal cancer screening. The plan focused the quality improvement program on patients aged 50 years and older, specifically to encourage them to have a colonoscopy.

Quality improvement staff abstracted data from the system's EMR to determine the number of patients in need of a colonoscopy. Records concluded that approximately 70,000 members would need a colonoscopy. A Clinical Advisor from the plan was initially concerned about resource availability: "We then realized that our availability of resources within the system was limited – obviously we couldn't do 70,000 colonoscopies over the next month." In effect, the plan examined the availability of resources against the needs of patients and stratified the risks of patients. Since the peak incidence of colorectal cancer is age 76, the plan decided that it would be optimal to initially target patients aged 65 to 69. The plan employed three quality improvement strategies, which made the program a success:

- To address the issue of system capacity – namely the concern that plan providers would not be able to deliver an adequate number of colonoscopies across all of the plan's regions – the hybrid plan developed a quality improvement effort that was staggered across regions over time. For example, the plan first drew upon its excess capacity in gastroenterology in the central region, and then moved on to test patients in other regions.
- The hybrid plan sent an initial mailing to eligible members. The letters were addressed from both the health plan and the American Cancer Society (ACS), and described that members should call the plan to schedule a colonoscopy. According to Clinical Advisors from the plan, partnering with ACS in this effort was highly effective: "In the letter we sent out, we included educational materials, and co-marketed it with the American Cancer Society. We used their input and their logo to reinforce to patients that it was beyond [our plan] and was an important recommendation."
- The hybrid plan developed an Access Center, essentially a group of trained professionals that staffed an appointment hot-line and provided support to the program. The Access Center played a key role in several respects: (1) scheduling patients who called in for colonoscopies; (2) calling patients who did not respond to the letter; and (3) entering patient information into the plan's EMR. The Center staff was able to identify whether the member had a colonoscopy that was not documented in the EMR. This technique was crucial: approximately one-third of patients that called to schedule an appointment had already had a colonoscopy, though it was not recorded in the EMR. The Access Center updated the EMR records for these members.

The hybrid plan completed colonoscopies for members in the central region and is pursuing its western and eastern regions. A Clinical Advisor from the plan indicated that the program was effective in delivering colonoscopies to a large population: "I can recommend colonoscopy in the office to my patients face to face, but it is a recommendation that can be implemented in a more systematic way."

Strategies Used to Encourage Implementation of the USPSTF Recommendations. Respondents described a number of strategies used to encourage the implementation of quality improvement activities at the practice or clinician level. Provider feedback is the most common strategy employed at all of the plans. Respondents described that provider feedback is the biggest driver of change, alerting clinicians of their performance in comparison to their colleagues.

Some health plans, such as the open-panel plan, offer provider education. The open-panel plan sends literature to medical offices and sometimes quality “field staff” to work with providers on certain quality efforts. The open-panel plan also distributes quarterly provider mailings and a regular newsletter about preventive medicine. The governmental plan is active in provider education as well, offering specialized training sessions for clinicians to teach them how to use new tools. For example, recently a new clinical reminder was added to the governmental plan’s EMR. Health IT staff held training seminars to teach clinicians how to use the new tool, giving them an opportunity to ask questions prior to using the tool in a clinical setting. All of the plans use clinical reminders to encourage the implementation of quality improvement at the clinician level. Finally, the government plan provides medical education offerings to give clinicians an extra incentive to participate in quality improvement activities.

Another key strategy employed by a few of the plans is to reward providers for quality improvement. According to a Quality Improvement Staff respondent at the closed-panel plan: “You reward, in every way you can, that group, in an effort to ensure that they will continue to work with [the quality improvement program].” The closed-panel plan incentivizes its physicians to strive for improvements. One respondent indicated that the plan’s quality improvement staff examine the results of prevention screenings criteria and other clinical HEDIS measures to identify high-performing medical centers. Staff of high-performing centers are rewarded with group meals, a trophy or plaque, or public recognition. In the majority of the health plans, the reimbursement structure rewards the delivery of clinical preventive services, which also contributes to quality improvement.

2.4 The Impact of the Reimbursement Structure on the Delivery of Clinical Preventive Services

We were interested in learning whether the health plan’s reimbursement structure was designed to foster quality improvements in the area of preventive health. We asked respondents about the impact of the reimbursement structure on the delivery of clinical preventive services. Specifically, “does the reimbursement structure at [the health plan] reward the appropriate delivery of clinical preventive services?”

We found that the majority of the health plans utilized the reimbursement structure to reward the delivery of clinical preventive services – but to varying degrees. In the case of the hybrid plan and the governmental plan, individual physicians are financially rewarded for performing well on certain performance measures related to clinical preventive services. These plans indicated that their reimbursement structures have a “pay-for-performance” component, whereby financial incentives for medical teams and physicians are tied to health care quality. The open-panel plan is currently developing a pay-for-performance component for preventive health.

The closed-panel plan rewards its medical teams based on performance, but does not financially reward individual physicians. Respondents indicated that physicians were salaried at the closed-panel plan, and rewards are provided at the macro-level rather than the individual physician-level. Individual physicians do not receive financial compensation for high performance. Rather, the regional plan recognizes district medical teams that perform well on quality targets (e.g., bringing

screening rates for breast cancer up to 85%, etc.) through group meals and gift certificates. Quality targets are sometimes based on the HEDIS measures. One Clinical Advisor indicated that “[physicians] are pretty much on a straight salary that doesn’t have much to do with how well or how poorly we do. Organizationally, we have team-based incentives that are always tied to quality.”

The hybrid plan has a sophisticated pay-for-performance program which provides financial rewards to high performing health plan staff as well as physicians. The hybrid plan has only implemented its pay-for-performance program for a diabetes care initiative thus far, though it plans to incorporate other preventive health services in the future. A Clinical Advisor respondent from the plan indicated that the plan has a “tiered reward structure” whereby the highest performing health center site is in the top tier, the second highest performing site is in a slightly lower tier, etc. Each site is rewarded according to its tier’s ranking. Health plan staff, such as providers, nurses, radiology technicians, and clerical workers who perform in the top tier, receive a reward every six months; staff in lower tiers receive smaller rewards. This is a particularly interesting aspect of the hybrid plan’s reimbursement structure because staff are also eligible to receive rewards (in addition to providers). Physicians also have quality summaries that reward them according to their performance on USPSTF recommendations such as mammograms for breast cancer, Papanicolaou smears for cervical cancer, and childhood and adolescent immunizations.

While the governmental health plan physicians are salaried by the Federal government, recently there has been a movement towards adopting performance based reimbursement. The Clinical Advisor respondents were most familiar with this shift in the reimbursement structure, indicating that a small percentage of a physician’s bonus would be determined by performance on clinical preventive services as well as other services. Other respondents indicated that physicians were strictly salaried, and were unfamiliar with the pay-for-performance aspect of the reimbursement structure. A Medical Director from the governmental plan discussed that the shift in the governmental plan’s reimbursement structure is relatively recent. Physicians who meet certain quality benchmarks based on certain measures would be rewarded for their performance (e.g., a score of 85% or better on a particular performance measure). According to the Medical Director, physicians that do comply with the governmental plan’s clinical preventive services guidelines will receive a larger bonus. Approximately 5% of their bonus is determined by individual performance, while another 5% is based on the performance of the facility as a whole. As a result, salaries are not only based on individual provider performance but also on peer performance.

The open-panel plan’s reimbursement structure is not currently utilized to encourage quality improvement with regard to the delivery of clinical preventive services. Few of the respondents at the open-panel plan commented on the plan’s reimbursement structure. The open-panel plan recently piloted a small effort related to pay-for-performance, and is currently in the development stage for a broader pay-for-performance that will include a focus on preventive services.

2.5 The Role of HEDIS in the Delivery of Clinical Preventive Services

For the past decade, HEDIS has been used to evaluate the quality of outpatient care in many large managed health care plans, making it an interesting variable for further consideration during our interviews. Empirical literature suggests that the HEDIS performance measurement set has profoundly influenced the way preventive care is delivered.⁶⁵ Respondents confirmed the importance of HEDIS performance measures in their health plans.

Respondents occasionally confused the USPSTF recommendations and HEDIS measures. Only a handful of the respondents actually make a distinction between the two. For example, a Director of

Quality Improvement at the hybrid plan indicated that HEDIS criteria are “as you know, equal to the USPSTF [criteria]” for breast cancer screening. Many respondents were highly familiar with clinical preventive services in terms of HEDIS measures, but unfamiliar with the USPSTF recommendations.

Respondents across health plans conveyed that HEDIS strongly influences which clinical preventive services are provided and how frequently services are tracked and measured. It appears that the USPSTF recommendations associated with HEDIS measures are evaluated and tracked more frequently than USPSTF recommendations that are not associated with HEDIS measures. According to a Quality Improvement Director, one of the plans provides financial incentives for health groups to deliver mammograms in the 90th percentile for HEDIS.

2.6 Perceptions of the USPSTF Recommendations

Health plan leadership and staff provided positive feedback on the USPSTF recommendations, describing them as “objective,” “unbiased,” “purely evidence-based,” “less influenced by emotion [than other organizations],” “user-friendly,” “broad-based,” “balanced,” “very thorough,” “packaged well,” and “neutral.” The next section begins with our findings on respondents’ perceptions of the packaging of the USPSTF recommendations and the competing recommendations used by health plans. Finally, we move on to a discussion of the alignment of the Task Force’s prevention priorities with other systems-level variables and state and Federal initiatives.

Packaging of the Recommendations. Respondents were asked to comment on the packaging of the USPSTF recommendations. Specifically, respondents were asked: “Are the USPSTF recommendations packaged in a user-friendly way to make review, adoption, and integration as straightforward for you as possible?” The majority of respondents found that the USPSTF recommendations are packaged in a user-friendly way. Respondents described that the recommendations are “thorough,” “easy to read,” and “very easy to follow.” Clinical Advisors expressed that the USPSTF recommendations are accessible because they are on the Internet. One Clinical Advisor noted that “since the recommendations are available on the web, it’s very easy for people when they are researching a subject.” A Clinical Advisor from the closed-panel plan explained that the recommendations are packaged in a highly organized and usable fashion: “There’s a recommendation, a letter that goes with it, and there’s background. And then there is more background and references. From my standpoint, it’s sort of the best packaging possible.” Given that the interviews were conducted prior to the release of the USPSTF’s 2006 Guide to Clinical Preventive Services, this feedback reflects the USPSTF’s 2005 Guide to Clinical Preventive Services.

Several interviews with hybrid plan participants were conducted in late November 2006, after the release of the 2006 recommendations. While we did not ask respondents to comment specifically on the 2006 Guide to Clinical Preventive Services, a Director of Quality Improvement respondent indicated that the 2006 Guide is organized in a more user-friendly format than previous editions: “The recommendations are packaged in a much more user-friendly way than they were before on the website.” The respondent indicated that it is easier to identify when recommendations were last updated.

Several respondents felt that AHRQ could improve upon the packaging of the USPSTF recommendations. A Medical Director respondent from the open-panel plan described that the electronic format of the recommendations is not optimal because the clinician has to “click several times and then you lose your audience.” This respondent’s recommendation was to reduce the number of times the user has to click through the website to access the recommendations. A Medical Director respondent from the government plan also described the main document as too

long and cumbersome to read given his/her clinical responsibilities. The respondent commented: “Here is a 100 page booklet of new recommendations. When do you want me to review that? What day are you going to give me off from my clinical responsibilities to review this information?”

One interesting finding is that respondents from the closed-panel and governmental plan indicated that the packaging of the USPSTF recommendations does not affect whether the recommendations are integrated and delivered at their systems. According to several respondents, the USPSTF recommendations are not distributed to individual physicians, but rather used in combination with recommendations from other sources to inform the development of plan guidelines at the systems-level. A Director of Quality Improvement at the closed-panel plan indicated: “It probably wouldn’t matter how [the USPSTF recommendations] are packaged because our process would occur regardless. It’s not like we take the Task Force documents and send them out to our physicians.”

Since the adoption of clinical preventive services recommendations occurs at the systems-level, many clinicians are not reviewing the recommendations from the Task Force. A Clinical Advisor respondent from the closed-panel plan explained that “[clinicians] are not held accountable to the Task Force – we’re held accountable to our leadership. [AHRQ and the Task Force] need to communicate the recommendations to the leadership.”

While the USPSTF recommendations target clinical audiences, we found that two Clinical Advisors and Quality Improvement staff for the government plan who indicated that they are not familiar with the packaging of the USPSTF recommendations.

Competing Recommendations. In order to assess the issue of competing recommendations, respondents were asked: “Other than the Task Force, what are your other sources of information for clinical preventive services?” Over 45 different organizations were cited as other sources consulted. The Medical Director at the open-plan discussed that specialty societies, such as the American Academy of Family Practice, are a major source for the plan. Exhibit 11 presents a sample of organizations cited by plan respondents and referenced in prevention materials as sources of clinical preventive services recommendations.

Sources cited by respondents from the open-panel plan include the Centers for Medicare and Medicaid Services, American Health Quality Association, Ambulatory Care Quality Alliance, American Diabetes Association, American Heart Association, American Pediatric Society, and the Centers for Disease Control and Prevention. The closed-panel plan referenced these sources as well as the Canadian Task Force.

The hybrid plan uses recommendations from specialty societies and organizations such as the American Cancer Society for its colorectal cancer screening recommendations. The hybrid plan also uses the American Academy of Pediatrics for recommendations on immunizations and the American Diabetes Association for recommendations on diabetes. Respondents from the hybrid plan mentioned that they consult the HEDIS measures when developing their recommendations for clinical preventive services.

Respondents from the government plan did not have a strong sense of which sources are consulted for clinical preventive services recommendations – potentially because the recommendations are developed exclusively by the headquarters office. However, the Director of Quality Improvement for the governmental plan indicated that some sources were the USPSTF, Institute for Healthcare Improvement, the Patient Safety Foundation, the Centers for Disease Control and Prevention, and HEDIS.

When asked “how do [other organization’s] recommendations compare to the Task Force recommendations in terms of ease of adoption and integration,” several respondents indicated that the recommendations from the Task Force are easier to use. The USPSTF recommendations were described as “more balanced” and “neutral” and “more strictly evidence-based” than recommendations from specialty societies, which “carry some bias” because they “represent the financial interests of physicians.” Other respondents, such as a Director of Quality Improvement from the open-panel plan finds that recommendations from specialty societies like the American Heart Association are relatively comparable to those produced by the Task Force.

Exhibit 11: Sources of Recommendations for Clinical Preventive Services

<i>Alphabetical Listing of Organizations</i>	
1. Agency for Healthcare Research and Quality	24. Centers for Disease Control and Prevention
2. Ambulatory Care Quality Alliance	25. Centers for Medicare and Medicaid Services
3. American Academy of Family Practice	26. Competing health plans
4. American Association of Clinical Endocrinologists	27. Gastroenterological Association
5. American Cancer Society	28. Gastrointestinal Consortium
6. American College of Cardiology	29. Institute for Clinical Systems Integration
7. American College of Gastroenterology	30. Institute for Healthcare Improvement
8. American College of Radiology	31. Institute of Mental Health
9. American College of Rheumatology	32. International Diabetes Center
10. American Diabetes Association	33. Medicare
11. American Gastroenterological Association	34. National Asthma Education and Prevention Program
12. American Gastrointestinal Endoscopic Surgeons	35. National Business Coalition on Health
13. American Health Care Quality Association	36. National Cholesterol Education Program
14. American Heart Association	37. National Committee for Quality Assurance, HEDIS
15. American Hospital Association	38. National Institute Of Health
16. American Medical Association	39. National Institute of Health, National Heart, Lung, and Blood Institute
17. American Pediatric Society	40. National Institute on Alcohol Abuse and Alcoholism
18. American Society for Gastrointestinal Endoscopy	41. National Kidney Foundation
19. American Society of Colon and Rectal Surgeons	42. National Osteoporosis Foundation
20. American Thoracic Society	43. Patient Safety Foundation
21. American Urological Association	44. State Medical Society
22. Canadian Society of Colon and Rectal Surgeons	45. Surgeon General's Report
23. Canadian Task Force	

Alignment with Systems-Level Variables. Directors of Quality Improvement, Quality Improvement Staff, and Medical Directors were asked “Are the Task Force’s prevention priorities aligned with other systems-level variables – such as payer expectations, industry quality indicators, and consumer demand – that you have to manage?” Overall, there was a mix of responses regarding whether the prevention priorities were aligned with systems-level variables. Several respondents indicated that

the Task Force's prevention priorities are aligned well or fairly well with other systems-level variables, but did not elaborate on specific variables. For example, a Medical Director respondent at the governmental plan discussed that the Task Force's prevention priorities are closely aligned with systems-level variables because priorities are not overly strict, lax, or too liberal. A few respondents commented that prevention priorities are aligned with payer expectations and quality indicators; however, responses varied on the degree of alignment with these variables.

Respondents across plans described that the prevention priorities are aligned moderately well with quality indicators, like the HEDIS measures. Respondents confirmed the importance of HEDIS performance measures in their health plans, suggesting that the USPSTF recommendations associated with HEDIS measures are evaluated and tracked more frequently than USPSTF recommendations that are not associated with HEDIS measures. Our interviews suggested that many respondents considered the USPSTF's prevention priorities to be very closely aligned with HEDIS measures – so close in fact that many respondents confused the USPSTF recommendations and HEDIS measures or believed that the former are identical to the latter.

When asked to provide specific examples where the recommendations are and are not aligned with other factors, a Director of Quality Improvement for the closed-panel plan indicated that the Task Force's prevention priorities are aligned with quality indicators on colorectal cancer screening, breast cancer screening, and specifically, mammography for breast cancer. Another respondent from the open-panel plan remarked that the prevention priorities are moderately to significantly aligned with quality indicators, poorly aligned with reimbursement, and poorly aligned with consumer demand. A Director of Quality Improvement respondent from the governmental plan also suggested that the Task Force's prevention priorities are not aligned with "reimbursement." However, the respondent commented that it would be difficult to align the Task Force's prevention priorities with the government plan's reimbursement structure, given that the plan provides services to its population regardless of the associated costs.

Our strongest finding is that many respondents believe that the USPSTF's prevention priorities are not aligned well with consumer demand. Several respondents were particularly interested in offering their thoughts on the alignment of the Task Force's prevention priorities with consumer demand. A Medical Director from the open-plan remarked that consumers often have priorities and agendas that are not necessarily aligned with prevention, in general. The respondent went on to say that consumers often want a tangible solution to the problem at hand (e.g., prescription medication or medical procedure) rather than counseling or other medical advice: "Any time a recommendation is going to purport [the provider] doing nothing or doing little or just giving the patient advice to go home, rest, and drink lots of fluids – any recommendation that doesn't support giving patients a prescription – will fly in the face of what the consumer wants."

Other respondents took a slightly different perspective. A Director of Quality Improvement at the government plan remarked that the only time the prevention priorities do not align with consumer demand are for flu immunizations, where the demand often outstretches supply. Given the plan's population is predominantly over 50 years old, the government plan has some difficulty meeting the high demand for the flu vaccine. Another example worth noting is that a Director of Quality Improvement from the hybrid plan suggested that the prostate-specific antigen (PSA) test is not necessarily in alignment with consumer demand, though further detail was not provided.

Our question regarding the alignment with systems-level variables such as consumer demand led to a more global discussion about prevention priorities. One respondent indicated that the Task Force's prevention priorities were not aligned with consumer demand because our society does not

value preventive health, evidenced by the obesity epidemic, high prevalence of certain preventable diseases, and rampant prescription drug usage. On a similar note, the Director of Quality Improvement for the open-panel plan cited that prevention and wellness are the last priorities for large purchasers of health care, such as employers. The respondent, who consequently was also clinically trained, expressed frustration that purchasers are more concerned with cost than preventive health care: “What I want to say to some of these purchasers is ‘don’t you want your employees at work rather than at a hospital or a sick bed?’” As a result, according to this participant, the real goal should be to “push” preventive health care to consumers, and ideally give consumers the tools to manage their own health care.

The theme of personal responsibility reemerged in our interview with a Medical Director for the open-panel plan. According to this respondent, consumers have to be able to advocate for their own health care and ask providers for health screenings and examinations. This respondent told us that consumer demand is poorly aligned with the Task Force’s prevention priorities because there is an “unspoken assumption” behind the recommendations that patients are taking some form of responsibility for their care when, in reality, personal responsibility for health care has slipped away from medicine.

Several other respondents remarked that consumers do not have the knowledge and/or tools to request screenings from their providers. Consumers were described as relatively unknowledgeable about the importance of prevention and incapable of starting conversations with their health care providers about preventive health care. For example, one respondent from the closed-panel plan commented that the average person does not understand that preventive health care will help him or her to stay healthy and more active in the long run.

Consumer education about the importance of preventive health was highlighted as a key priority for AHRQ. When asked “do you have suggestions for what the Task Force can do to better align its recommendations with other factors that you need to weigh when deciding whether or not to adopt a recommendation,” one respondent remarked that AHRQ could play an important role in educating consumers. A Medical Director from the open-panel plan indicated that: “consumer demand presumes consumers know what they want and what quality is, and I think that has been a very weak area. I think AHRQ could do a lot more to educate consumers about what quality is.” Several people suggested that AHRQ should reach out “direct-to-consumer” about preventive health in order to better align the Task Force’s prevention priorities with consumer demand. Rather than reaching out to clinicians and the health care community, AHRQ should “get their name out – not with doctors, insurers, and hospitals, but with Joe public.” Others recommended education for consumers, in order to “get consumers aligned with the USPSTF rather than the other way around.” Specifically, a Director of Quality Improvement at the open-panel plan cited smoking cessation as an example of a similar “direct-to-consumer” movement and suggested that “the more we can push to the consumer to help them to interact with the health care provider, the better.”

Another suggestion from a Director of Quality Improvement respondent from the closed-panel plan was to align the Task Force’s recommendations with those of other larger specialty groups. The respondent suggested that the USPSTF invite comment or participation from larger specialty groups in developing the recommendations, in order to potentially align recommendations with those of other groups: “It would be fantastic if the American Cancer Society had the same recommendations as the Task Force.”

Alignment with Federal and State Initiatives. Similar to the previous section on alignment with systems-level variables, respondents were also asked to comment on whether the Task Force’s

prevention priorities are aligned with other Federal or state initiatives that their health plans follow. We asked respondents: “Are the Task Force’s prevention priorities aligned with Federal initiatives, such as the National Health Quality or Disparities reports, and/or state initiatives that you are required to, or choose, to follow?” Overall, of the 17 responses we received to this question, six respondents indicated that the prevention priorities are aligned with Federal and/or state initiatives. Respondents were also asked “can you provide examples where the recommendations are and are not aligned with other factors.” Several interesting responses are provided below as examples:

- A Medical Director respondent from the open-panel health plan explained that the Task Force’s recommendations for screening, such as mammography for breast cancer, are aligned now with Federal and state initiatives, although they were not in alignment ten years ago.
- A Director of Quality Improvement from the open-panel plan indicated that the Task Force’s prevention priorities are aligned with state initiatives, citing that the open-panel plan collaborated with the state as well as pediatricians and family physicians to adopt a set of recommendations for children, based primarily on recommendations from the American Academy of Pediatrics and the Task Force.
- A Quality Improvement Staff respondent from the closed-panel plan indicated that the Task Force’s prevention priorities are aligned with state and Federal initiatives. In particular, the Task Force’s prevention priorities for cancer screenings are aligned with state and Federal programs related to tobacco cessation.
- A Quality Improvement Staff member from the hybrid plan commented that the prevention priorities are aligned with state requirements. However, the respondent did qualify this statement with “in our state, there are not a lot of requirements, other than to be NCQA certified.” When asked how the Task Force could better align itself with other Federal and/or state initiatives that the plan follows, the respondent indicated that the hybrid plan is “not really driven by [state or Federal] initiatives.”

While we did not plan to ask Directors of Health Information Technology this question, discussions with one particular respondent from the open-plan led to a discussion about alignment with Federal and state initiatives. The respondent commented that the Task Force’s prevention priorities related to primary care and family care are aligned with state and Federal initiatives, but not as aligned with state initiatives related to other clinical specialties.

The majority of respondents indicated that they did not know whether the Task Force’s prevention priorities are aligned with other state or Federal initiatives because they did not have a strong sense of the national and state priorities. Other respondents chose not to answer this question.

2.7 Barriers to the Adoption, Integration, and Delivery of the USPSTF Recommendations

Health plans faced a number of common barriers with regard to adopting, integrating, and delivering the USPSTF recommendations and recommendations for clinical preventive services, more generally. These challenges are not due to fundamental issues with the USPSTF recommendations, but rather the result of larger systems-level challenges that health plans face with respect to adopting and integrating clinical preventive services recommendations. To study these challenges and barriers, we asked respondents to draw upon their experiences with the USPSTF recommendations, specifically asking them three key questions:

- “What barriers do you face to adopting the Task Force recommendations at the systems-level?”
- “Are there fundamental issues with the recommendations themselves – such as the topics or populations that the recommendations address – that prevent adoption and implementation at your system?”
- “Are certain types of Task Force recommendations easier to adopt and integrate than others?”

Health plan staff provided a candid overview of the barriers that are unique to their plans, health care settings, and patient populations. Barriers cited ranged from provider time constraints and staffing challenges to issues related to the integration and delivery of specific Task Force recommendations. Many of these barriers were not unique to one particular health plan, but were recognized by respondents across plans. This section provides a global discussion of the key barriers cited by health plan respondents, supported by specific examples from the plans.

Time Constraints. Health plan providers and staff face significant time constraints which may impede the delivery of the Task Force recommendations. Clinical Advisors from the hybrid plan told us that time pressures are serious for clinicians that deliver clinical preventive services: “Just the sheer scope [of the recommendations]. It’s a lot for any one individual in any one exam room to sift their way through.” Another Clinical Advisor respondent commented that the Institute of Medicine reported that only half of the recommended CPS recommendations are presented to patients at any one time: “I think that [the IOM report findings are] very true because of the time pressures.” A Clinical Advisor from the closed-panel plan indicated that “if you actually took the time to do all of the CPS with every patient and have all of the necessary conversations and address all of the concerns necessary, you would be working 18 hours a day.”⁶

A Medical Director for the governmental plan indicated that one of the greatest challenges is the time associated with delivering all of the necessary CPS recommendations to the plan’s patient population. This respondent cited that providers for the governmental plan have to address 30 different points during each patient visit, which can be a daunting task, especially with only a limited amount of face-to-face time with patients. This respondent expressed frustration with the number of recommendations, questioning how providers would find the time necessary to deliver more clinical preventive services recommendations.

From a quality improvement perspective, one respondent from the governmental plan told us that there are too many recommendations, given the limited amount of time that a provider has with each patient. Another Director of Quality Improvement from the closed-panel plan indicated that providers have a “full plate and [CPS recommendations] are just one more thing for them to do.” While periodically the Quality Improvement Department at the closed-panel plan does receive concerns from providers about the time constraints they face in light of CPS recommendations, the Director of Quality Improvement indicated that most clinicians “are willing to implement [CPS recommendations]” because it is the “right thing to do” for the plan’s patients.

Patient Resistance. Patient resistance to preventive care services during routine medical appointments was described as a barrier. Respondents remarked that patients typically have their own agendas and priorities when they enter the exam room, and it is difficult to turn the discussion to preventive health. One Clinical Advisor from the hybrid plan told us that “[clinical preventive

⁶ Yarnall (2003) estimated that it would take approximately 7.8 hours per day for a primary care physician to deliver all of the preventive services recommended by the USPSTF.

services] are not necessarily on the patient’s agenda. [Patients] come with their own agendas and you’re trying to work [the recommendations] into the 12 minutes that you have.”

Another Clinical Advisor from the open-panel plan told us that, from a provider’s perspective, it is difficult to deliver all of the necessary recommendations due to patient resistance. For example, the respondent recently recommended a screening for retinology to a patient and was met by extreme resistance. The patient had only made the appointment to have the clinician complete “missed work papers” for an extended absence related to a minor injury, and subsequently, was not interested in learning about any other necessary screenings. The same Clinical Advisor respondent also cited diabetic patients as a very difficult population to deliver CPS recommendations: “We have a lot of resistance, especially with diabetics, as people do not want to take more pills...It’s difficult to overcome patient resistance.”

A Director of Quality Improvement for the closed-panel plan also described that family members and friends can affect whether a patient receives the recommended clinical preventive services: “Influences within a patient’s social circle – namely family and friends – can create or exacerbate patient resistance.” On a similar note, another Director of Quality Improvement respondent from the closed-panel plan indicated that popular media has an impact on the perception of clinical preventive services. For example, the respondent told us that “many of the UPSTF recommendations are more conservative than the lay press believes people need. Colorectal cancer screening for example. Katie Couric is on the radio and posters telling people ‘you’ve got to go get your colonoscopy.’ But, there may be less invasive options available.” Interestingly, health plan respondents consider outside influences from family, friends – and even the media – to be significant barriers to ensuring that people receive the recommended clinical preventive services.

Staff Availability. Limited staff availability to complete the recommended clinical preventive services is a barrier in some health plans. There are not enough staff members to deliver all of the recommendations. A Director of Quality Improvement respondent from the governmental plan remarked that prioritization of CPS recommendations is crucial because of the staffing issue. The respondent told us that health care workers are oversaturated with clinical preventive services recommendations, making it difficult to ensure that all of the necessary CPS are actually being delivered: “We never give any of the [CPS recommendations] the justice they deserve because we don’t have the staffing resources, or people reach a saturation point because they can only take in so much.” There was a common theme that health care workers are oversaturated with every new clinical preventive service recommendation, making it difficult to give each recommendation proper consideration. Staffing availability was less of a problem for other plans, such as the closed-panel plan. According to a Clinical Advisor for the closed-panel plan, the plan’s EMR has ameliorated the problem of staff availability. Specifically, the Clinical Advisor indicated that: “The power of the EMR – as well as the patient lists that are easily queried by specific topics such as when every diabetic last had an eye exam – we have so many tools available that the resource issue is less of an issue.”

Delivery of Counseling Recommendations. A unanimous theme across all of the plans was that counseling recommendations are more difficult to adopt and integrate than screening recommendations. This issue was raised in response to two different questions. First, we asked respondents: “What barriers do you face to adopting the Task Force recommendations at the systems-level.” Then, later we asked: “Are certain types of Task Force recommendations easier to adopt and integrate than others? For example, are screening recommendations easier to adopt and integrate than counseling recommendations, or vice-versa?” Counseling recommendations were

cited as highly difficult to measure and monitor from a quality improvement perspective and difficult to deliver from a clinical perspective.

Respondents suggested that counseling recommendations are more difficult to adopt and integrate (than screening recommendations) because there are inherent challenges related to measuring and monitoring data from counseling recommendations. One Director of Quality Improvement from the open-panel plan indicated that, unlike screening recommendations, counseling recommendations may not have a distinct unit of measurement to indicate whether or not the recommendation was completed. Overall, respondents indicated that it is more difficult to assess whether a counseling recommendation has been delivered because the measure is somewhat subjective. Many respondents made the comparison between implementing a screening or lab test (e.g., hemoglobin A1c test) and delivering tobacco cessation counseling, citing the latter as more difficult to measure and monitor than the former. A Clinical Advisor from the closed-panel plan further described that it is easier to track and measure a recommendation that can be translated into a metric: “If it’s a talking thing [counseling recommendation], you can say [the recommendation] but how do you know you’ve done it? You’ve got to have a metric.” Quality improvement staff from the hybrid plan said: “We’re kind of data driven...So if it is a counseling session – and we cannot get the data – it’s a moot point for us to push it.”

Clinical Advisor respondents indicated that counseling recommendations are difficult to adopt and integrate because of challenges related to staffing and patient resistance. A Clinical Advisor respondent at the governmental plan told us that screening recommendations are easier to integrate than counseling recommendations because the former requires less staff than the latter: “Counseling means you have to have the staff. [There are] a lot of recommendations. We may not be implementing everything or monitoring everything.”

A Director of Quality Improvement for the governmental plan indicated that patients are not interested in certain types of clinical preventive services, especially related to counseling, making some more difficult to deliver than others. On the same point, a Quality Improvement Staff member told us that at the governmental plan, some counseling recommendations must be conducted at every patient visit. One example the respondent provided was tobacco cessation counseling. The Quality Improvement Staff person indicated that tobacco cessation counseling is conducted for some patients upon every provider visit. “We were mandated to do some [counseling recommendations] at every visit, so you just do it. But [patients] get tired of it and say ‘I know, I know’ or ‘you told me this yesterday,’ and it becomes a joke.” As a result, over the long run, patients become more resistant to certain recommendations.

Overall, respondents remarked that counseling recommendations were highly challenging to deliver. A Clinical Advisor respondent from the hybrid plan ranked a variety of recommendations according to ease of adoption and integration, citing lab tests as easy to adopt and lifestyle changes as most difficult to adopt: “It is easiest to adopt a recommendation for a lab test, second would be a procedure, and third would be a lifestyle change. Lifestyle changes – such as counseling to reduce your BMI – are more difficult [to adopt].”

Barriers to Integration of Certain Types of USPSTF Recommendations. Respondents indicated that certain types of recommendations are easier to adopt and integrate than others. Specifically, recommendations that are not associated with specific measures are more difficult to integrate and monitor in the plan’s EMR. For example, the closed-panel plan has some difficulty capturing certain recommendations for depression in its EMR. A Director of Quality Improvement at the closed-panel described that three follow-up provider visits (within one year) are required for patients on

antidepressant medications. (While this is an NCQA requirement, the respondent may have thought this was also a Task Force recommendation). Typically at the health plan, patients have follow-up visits with the ordering practitioner or another medical professional such as a registered nurse or physician's assistant. However, the measure is only associated with one code, which does not distinguish whether a patient had a follow-up appointment with a registered nurse or the ordering practitioner. According to this respondent, the barrier is not screening recommendations or counseling recommendations. Rather, the problem lies with measurement: "It's how you are going to measure it that becomes more of a barrier."

From a different perspective, a Clinical Advisor at the hybrid health plan indicated that Task Force recommendations that can be delivered by non-physician members of the staff are easy to adopt – and highly desirable. Recently, the hybrid plan implemented a nurse-driven tobacco cessation program that puts basic decision support tools in front of the nurse and prompts him/her to do tobacco cessation counseling. The Clinical Advisor found this program to be useful because "it's simple, short, and one less thing for the doctor." The tobacco cessation program is the only program of its kind at the plan to integrate the help of nurses, specifically.

Availability of Clinical Preventive Services in the System. Respondents discussed that the availability of the clinical preventive services in practice settings is a barrier. A Director of Quality Improvement from the closed-panel plan indicated that certain Task Force recommendations are difficult to implement for a large patient population. Recommendations that require widespread screenings test a plan's internal capacity to deliver the recommendations, but also have implications for the larger clinical community: For example, the respondent told us that Abdominal Aortic Aneurysm (AAA) Screening is difficult to implement in a population of half a million members because "it overwhelms the system. Not only internally because we do our own radiology, but in the community if you start referring out. No one [in the community] is prepared to do that many ultrasounds. You need to make sure that there is enough access in the community to actually be able to deliver [the CPS recommendation]." According to this respondent, the challenges to adopting the recommendations do not lie with the recommendations themselves – but rather with the system's capacity to implement the recommendations.

Another respondent from the governmental plan commented on the colorectal cancer recommendation, citing that availability of screening tests can be an issue: "There are not enough endoscopies to do the number of colonoscopies necessary in the state if we recommended that for everyone over age 50. Specialist availability even in the [governmental plan] is a factor." A Clinical Advisor respondent from the plan indicated the system is stretched to its maximum capacity:

"Another issue that has been problematic at our facility is waits and delays for colonoscopy. Leaders have taken some drastic measures, including referrals to the private sector. The direct cause is patients coming to [the plan] for care and, for example, without ever having had a colonoscopy in their life though they are over 50. Fecal occult blood tests are done routinely, and we offer colonoscopy also, which further inundates our backlog."

According to a Director of Quality Improvement at the closed-panel plan, access to preventive services is an issue across the country. The respondent indicated that "for gastroenterology – colonoscopies – there is a national shortage, especially on the East Coast. People just don't have the availability to do these as recommended or indicated. It's more of a national thing, rather than just our region." Breast cancer screening was also mentioned as a clinical preventive service that is a challenge to deliver because of resource availability: "There's been some discussion about mammography. When do you stop doing mammography? Does an 80 year old woman need a

mammography? What is the right thing to do? Because our resources are limited, what is the trade-off?”

Geographic Barriers to Care. Respondents from the hybrid plan discussed the barriers to clinical preventive services for the rural contingent of its patient population. A Director of Quality Improvement from the hybrid plan discussed that “we’re in a rural area and access to care is one of our members’ major issues.” For patients living in the rural, outermost edges of the hybrid plan’s service area, access to clinical preventive services is a serious barrier. Travel is required for many patients seeking specialized health care services. In some rural areas, immediate access to colonoscopies and mammograms is an issue as well. Quality improvement staff from the hybrid plan discussed that data collection for their rural population is a challenge: “If we have to collect data manually, we may have geographical challenges to go get data. We may drive three hours to get one chart. That is the nature of the beast I guess.”

Information Technology Barriers. The Director of Quality Improvement for the hybrid plan indicated that “there are IT barriers” to delivering clinical preventive services. Namely, physicians would like to have regularly updated electronic lists of members who need clinical preventive services. However, regularly producing and distributing this information can be challenging because of IT-barriers. The respondent indicated that it is difficult for the plan to keep physicians up to date about their patients’ current needs: “That’s difficult to provide regularly because of all sorts of issues...claims-based information and having to wait for a claim to see if someone needs something or doesn’t. There are always barriers as to whether physicians are up to date.”

Process Barriers. Plans describe the process of adopting and integrating CPS recommendations as challenging. For the hybrid plan, controversy about recommendations from various organizations can make it difficult to seamlessly adopt and integrate clinical preventive services recommendations. One Quality Improvement staff member from the hybrid plan indicated that “the only time there is a barrier is if there is controversy between organizations, such as the American College of Obstetricians and Gynecologists compared to the Family Practice Association.”

A few respondents raised the concern that the UPSTF recommendations are not always aligned with the recommendations from other organizations, creating more work for health plans during the process of adopting and integrating the recommendations. In cases where recommendations are not aligned across various organizations that the plan references, leadership at the health plan has a more difficult time deciding which recommendations to adopt and implement. Specifically, a Clinical Advisor respondent from the hybrid plan told us that the recommendations from the Task Force do not align directly with the recommendations from the American Academy of Family Physicians. As a result, gaining consensus across the health plan about which recommendations to adopt and implement is more challenging.

Lack of Local Control. A lack of local control over the recommendations was described as a key area of frustration for respondents in the governmental plan. According to a Clinical Advisor, control over the adoption of clinical preventive services remains at the plan’s headquarters: “We’re in a Federal system. The mandate has to come from [our headquarters] for us to implement [clinical preventive services recommendations].” As a result, staff at the regional-level of the governmental system have very little control over which recommendations are adopted and integrated.

Barriers Related to Delivery of Recommendations in Clinical Practice. Respondents expressed a number of barriers related to the delivery of recommendations in clinical practice. First, according to a Clinical Advisor at the closed-panel plan, physician shareholders have substantial autonomy over the delivery of CPS recommendations, creating additional barriers to delivery. Physicians with

“shareholder” status become an elite part of the plan’s medical group where they enjoy job security and additional benefits. One respondent disclosed that “the biggest problem at [the closed-panel plan] is with salaried physicians. You get paid for seeing your scheduled patients. If you have someone who says ‘I have 200 diabetic patients and I don’t care if they get aspirin or statins,’ and they are already a shareholder, then I can’t do anything about it. We haven’t worked out an incentive and punishment system yet. We don’t go and invade people’s rooms.” The respondent indicated that while the plan does send electronic clinical reminders to prompt physicians to deliver recommendations, shareholders still have substantial control over delivery.

On a similar note, a Director of Quality Improvement from the closed-plan indicated that it is difficult to ensure the delivery of new CPS recommendations. According to this respondent, even with the capabilities of the plan’s EMR and associated technologies, it is difficult to ensure that new recommendations or changes to existing recommendations are being incorporated into practice: “If you decide to make a change [to a CPS recommendation], how do you get that into the individual practitioner’s brain? We can get it into their hands, into email, but how do you get that into practice?”

Another Director of Quality Improvement from the closed-panel plan discussed that practice patterns and personal beliefs can often interfere with the appropriate delivery of the USPSTF recommendations. The respondent described that even when the recommendation for a certain clinical preventive service changes, physicians’ practice patterns and techniques do not necessarily change in accordance. For example, if a recommendation has been in circulation for many years, and then suddenly there is a change in one particular aspect of the recommendation, it is more difficult to integrate the change into practice. One interesting example cited was for cervical cancer screening.

In 1999, the recommendation for cervical cancer screening at the closed-panel plan was to screen eligible women every three years after three normal Papanicolaou tests. However, plan providers were still performing the screenings every year in practice, namely because a few people believed that it was necessary to do the screenings on a yearly basis. Recently, the recommendation at the plan was reevaluated, though not changed. Interestingly, only after the second review have practice patterns finally started to align with the recommendation.

III. Improving Dissemination of the USPSTF Recommendations in Health Plans

3.1. Improving the Utility of the USPSTF Recommendations

Over the course of the semi-structured interviews, respondents suggested a variety of ways to improve the utility of the USPSTF recommendations. Suggestions for improving the utility of the recommendations ranged from improving the packaging of the recommendations to developing new prevention tools specifically designed for nurses delivering counseling recommendations. This section explores a few of the key suggestions.

- *Standardizing coding and measurement.* A Medical Director respondent at the open-panel plan suggested that AHRQ could create procedure codes or performance measures that coincide with the clinical preventive services recommendations in order to ease the process of integration: “AHRQ could come up with a standardized template for establishing measures to show performance. That would be valuable. They have one out there, and it’s a little too complex.” Standardizing measurements and procedures codes was an important issue at the hybrid plan as well. Health IT Staff respondents at the hybrid plan indicated that AHRQ

should develop procedure codes for the Task Force recommendations. The codes would be similar to HEDIS specification codes: “You can say that everybody needs to have a mammogram and that’s all fine and good, but there are subtle differences in the codes. In a way, if you can make them as specific as possible – like a HEDIS spec – that makes it easier.”

- *Cost information.* A Director of Quality Improvement at the open-panel plan highlighted that it would be an improvement to have cost information about preventive services and programs: “It would help if we had some cost information about preventive programs. If we had some type of cost analysis information of the adoption of preventive [recommendations], that would help us here at the plans.” A Clinical Advisor from the hybrid plan also indicated that it would be helpful for plans to have a better understanding of the cost and reimbursement implications of clinical preventive services: “Reimbursement is important. If you develop a screening for abdominal aortic aneurysm, but Medicare doesn’t pay for it until 2007, then it would help to know, in terms of implementation, that there is a reimbursement issue.”
- *Adequacy of the recommendations.* A Director of Health IT from the closed-panel plan requested for the USPSTF to provide an analysis of how decision-making should occur for people who are slightly outside of the recommendation’s age limit, or for individuals with multiple chronic conditions:

“The level of detail that I don’t think is routinely there is ‘for whom these are not appropriate recommendations.’ At an even deeper level – and this is unfortunately not something I think is easily provided – but how should decision-making occur for people who are outside of the recommendation? Recommendations are typically recommendations for healthy people. There is a creep into people with chronic diseases for whom the recommendations are often inappropriate and there’s a lot of wasted energy for that.”

Thus, according to this respondent, more specific information is needed to inform providers about how and when to recommend clinical preventive services to complex patient populations.

- *Packaging of the recommendations.* While the USPSTF recommendations are available on AHRQ’s website, some respondents indicated that it would be helpful to receive full paper copies of the recommendations. A Clinical Advisor at the governmental plan described that “anyone can access [the recommendations] with the Internet, but it takes time. Accessing them at hand would be easier. I’m not sure if we have anything in our library; I haven’t tried to look for it.” Quality Improvement Staff members of the governmental plan described that it would be helpful if the USPSTF recommendations could be distributed by the central office to the facility-level with the plan’s Technical Manual: “If we had the recommendations along with [our plan’s] Manual, which comes out every year, we could sit down and take the time to read it. If [the Task Force recommendations] could come out with the Manual, we could look at it.”
- *New prevention tools.* According to a Clinical Advisor from the hybrid plan, there is a need for new tools, and in particular, “anything that is provided at the patient level that is useful right out of the package to activate and motivate patients.” Another respondent indicated that it would be helpful for AHRQ to develop clinical decision support tools for nurses related to Task Force recommendations. Recently the hybrid plan implemented a nurse-driven tobacco cessation program, but did not have access to any clinical decision support tools

specifically designed for nurses. Clinical Advisors told us that “unfortunately, we ended up growing our own [clinical decision support tools for nurses].”

3.2 AHRQ’s Role in Improving the Dissemination of the USPSTF Recommendations.

Respondents indicated that AHRQ could play a key role in improving the dissemination of the USPSTF recommendations, particularly by launching new dissemination strategies to put the recommendations into the hands of health plan leadership and staff in various positions. Our conversations with respondents suggested that many people are unfamiliar with the USPSTF recommendations, including Directors of Quality Improvement and Quality Improvement Staff. However, a number of respondents would like to receive more information from AHRQ. Health IT Directors and Staff, the group that was least knowledgeable about the Task Force recommendations overall, indicated that it would be useful to know more about the USPSTF recommendations. One Health IT Staff respondent from the closed-panel plan told us that “I think the more people know about [the Task Force recommendations] the better. The Quality Improvement people are very busy. If I know what’s coming down the pipeline [in terms of clinical preventive services recommendations], I don’t think it hurts.”

Respondents also indicated that AHRQ and the USPSTF should disseminate more information about the methodology for selecting and prioritizing the recommendations. Directors of Quality Improvement from the open-panel plan and the hybrid plan both indicated that it would be helpful if the Task Force did more to disseminate information about the process used because this would help to “validate” the recommendations. A Director of Health IT from the open-panel plan indicated that from an information technology perspective, it would be useful if the Task Force targeted information about the process to Health IT Staff. A Director of Health IT from the hybrid plan cited that more process-related information would be useful: “If [plan leadership] said that they’re going to take Task Force recommendations and follow them, and they explained it to me, it would help me to do my job.”

A Clinical Advisor respondent indicated that it would be useful for AHRQ to improve the visibility of the USPSTF recommendations by participating in professional meetings for providers especially when the agenda focused on preventive health. One suggestion was for AHRQ to attend these meetings and potentially present on a few of the Task Force recommendations. Another suggestion from a Director of Quality Improvement was to mobilize a thought-leader group or professional symposium that discussed the Task Force recommendations in practice. Attendees would represent various health plans across the country that utilize the Task Force recommendations: “AHRQ could have meetings – some thought-leader kind of symposium that gets people like me together with other people like me, and creates a dialogue among [Task Force recommendation] users. A users’ group, so to speak.”

Thus, in sum, respondents believed that AHRQ can play a key role in improving the dissemination of the USPSTF recommendations. Dissemination efforts should target health plan leadership and staff – especially Directors of Quality Improvement, Directors of Health Information Technology, and providers – and also focus on improving the visibility of the USPSTF recommendations overall.

V. THEMATIC OVERVIEWS

Section V takes the evaluation findings a step further by exploring several of the most interesting and important cross-cutting themes. Next, we present five thematic overviews that analyze themes related to the adoption, integration and delivery, and dissemination of the USPSTF recommendations. Each thematic overview explores a single theme, relying on published and unpublished literature and the interviews to present top-level conclusions and to suggest areas for further research.

Our thematic overviews follow in this order:

1. The Impact of Pay-for-Performance on the Delivery of the USPSTF Recommendations
2. The Role of Health IT in the Integration and Delivery of the USPSTF Recommendations
3. Systems-Level Changes to Encourage the Delivery of the USPSTF Recommendations
4. Delivering the USPSTF Recommendations in a Rural Health Care Setting
5. The Impact of Health Plan Structures on the Delivery and Integration of the USPSTF Recommendations

The Impact of Pay-for-Performance on the Delivery of the USPSTF Recommendations

OVERVIEW. Health plans are using pay-for-performance in an attempt to increase the delivery of clinical preventive services. We explore the use of pay-for-performance in four different types of managed care plans.

Key findings include:

- ❖ Some health plans reward employees with annual bonuses, group meals, and/or recognition awards based on their delivery of certain clinical preventive services.
- ❖ Health plan leaders express mixed support for pay-for-performance, emphasizing the importance of proper implementation of pay-for-performance initiatives and the need for better integration with other quality improvement activities.
- ❖ Future research should explore ways in which pay-for-performance initiatives affect patient outcomes via the delivery of clinical preventive services.

Pay-for-performance, the idea of aligning financial incentives with high quality health care, has become a popular mechanism for fostering quality improvement in health care systems. A small albeit growing body of research explores the potential for pay-for-performance programs to change health care system behavior. Studies have specifically examined the impact of pay-for-performance initiatives on the delivery of a range of clinical preventive services such as cancer screenings, pediatric immunizations, and testing for diabetic patients.¹⁻⁸ However, little research has explored the impact of pay-for-performance programs on the delivery of the clinical preventive services specifically recommended by the U.S. Preventive Task Force (USPSTF).⁹ Furthermore, no studies have examined the use of pay-for-performance programs that reward the delivery of the USPSTF recommendations in different types of managed health care plans.

As part of a larger evaluation of the USPSTF recommendations for clinical preventive services, NORC at the University Chicago explored the role of health plan reimbursement structures on the

delivery of clinical preventive services. NORC studied the integration and delivery of the USPSTF recommendations in four different types of health plans: a closed-panel health plan, open-panel health plan, hybrid health plan having both open and closed-panel characteristics, and governmental health plan. Structured interviews were conducted with over 40 health plan staff members, including Medical Directors, Directors of Quality Improvement, Directors of Health Information Technology (IT), Quality Improvement and Health IT staff, and Clinical Advisors (clinicians who also serve in a leadership or broader prevention role). Respondents were asked five questions regarding the reimbursement structure at their health plans.¹⁰ The following overview synthesizes key findings with respect to the role of the reimbursement structure as a means for increasing the delivery of clinical preventive services in four different managed care plans.

Rewarding the Delivery of Clinical Preventive Services

The interviews confirmed that the closed-panel, governmental, and hybrid plans have begun to tie reimbursement to quality for clinical preventive services. While staff physicians of all these plans are salaried, there are additional opportunities to earn performance-based financial bonuses. The closed-panel plan has the most sophisticated pay-for-performance mechanism, which involves financial incentives, public recognition, and other in-kind perks. Physicians receive bonuses for performance on clinical quality elements which include one USPSTF recommendation: mammography for breast cancer screening. The financial pay-for-performance mechanism is

combined with team-based incentives for performing well; incentives at the provider group level included public recognition and group meals.

The hybrid plan also recently incorporated pay-for-performance mechanisms into its physician reimbursement structure for those physicians employed by the plan. Physicians are awarded bonuses for delivery of preventive services such as mammography for breast cancer screening, Papanicolaou smear for cervical cancer screening, and childhood and adolescent immunizations. A Director of Quality Improvement for the hybrid plan discussed that it has a generous pay-for-performance program which could conceivably add as much as 20% to a primary care physician's income. When asked how long it would take to see a change in clinician's delivery of the service, one Director of Quality Improvement from the hybrid plan indicated that the immediacy of the effect depends upon the size of the financial incentive: "If the [financial change] is small, maybe never."

The open-panel plan was the only plan whose reimbursement structure does not reward the delivery of clinical preventive services. Physicians are reimbursed for services rendered regardless of quality; and there are no additional incentives or disincentives to either deliver or withhold health care services. Respondents from the open-plan cited several barriers to implementing a pay-for-performance initiative. From a clinical perspective, open-panel plan providers are concerned about the pay-for-performance movement, in general. The Director of Health IT indicated that "in terms of pay-for-performance, providers are asking 'What are we being paid for today if you want to pay us for quality tomorrow?'" The plan's Medical Director also described the budgetary implications associated with pay-for-performance programs as a deterrent: "At the end of the day, no matter what you do in regard to paying incentives to physicians, it has to be budget neutral. The money must come out of someone else's pocket...it typically comes out of another provider's pocket in the form of less high-tech imaging tests, fewer surgical procedures, or maybe fewer admissions." A Director of Quality Improvement commented that the plan is developing a broader pay-for-performance effort that will include a focus on preventive services.

In terms of pay-for-performance, providers are asking 'What are we being paid for today if you want to pay us for quality tomorrow?' – Director of Health IT, Open-Panel Plan

The governmental plan recently implemented a pay-for-performance initiative for its senior management in fiscal year 2006. A Director of Quality Improvement described the pay-for-performance mechanism generally as "providers who score 85% or better get 10% on top of their baseline salary at the end of the year." According to respondents, given the little time elapsed since its implementation, the program's impact will likely not be ascertained until the end of 2007.

Is the Reimbursement Structure an Effective Means for Increasing Service Delivery?

Many respondents across plans indicated that the reimbursement structure is an effective means for increasing the delivery of clinical preventive services. A Director of Health IT from the open-panel plan indicated that the reimbursement structure may impact compliance with the USPSTF recommendations: "Whatever you pay [providers] for, they're going to do. If you structure [reimbursement systems] right, yes, it will improve compliance with the [USPSTF] recommendations." Other respondents across plans commented that the reimbursement structure is an effective means for increasing the delivery of clinical preventive services, but only one piece of a larger puzzle. A Medical Director of the open-panel plan indicated that pay-for-performance programs should be tailored to work in accordance with other quality improvement initiatives such

as health plan profiling tools that allow physicians to examine one another's performance. According to the respondent, pay-for-performance initiatives are only effective in combination with other strategies that encourage transparency: "You need to look at a network strategy. All of these things work in synergy. [Pay-for-performance] is effective but has to be part of a whole program that looks at performance."

***"You need to look at a network strategy. All of these things work in synergy. [Pay-for-performance] is effective but has to be part of a whole program that looks at performance."
– Medical Director, Open-Panel Plan***

Respondents cited a few disincentives to utilizing the reimbursement structure to improve the delivery of clinical preventive services. Staff from the closed-panel plan highlighted the concern that providers will learn how to "game" the system to manipulate a pay-for-performance program to increase payment. A Director of Quality Improvement described this problem as "a constant struggle to get people to do the right thing for their patients, and not for themselves." Respondents at the governmental plan indicated that while the reimbursement structure is designed to reward providers, performance of certain services may be directly attributable to non-clinical staff members who also contribute to the delivery of clinical preventive services. A Clinical Advisor indicated that "a lot of people who work toward [delivering a clinical preventive service] don't get any benefit or bonus. And the providers don't turn around and say 'thank you.'"

Conclusions and Further Exploration

Overall, our findings suggest that different types of health plans are incorporating unique pay-for-performance mechanisms that specifically reward the delivery of clinical preventive services. In addition, the majority of respondents across different types of health plans indicated that the reimbursement structure is an effective means for increasing the appropriate delivery of clinical preventive services. Future research should continue to explore the impact of health plan reimbursement structures and pay-for-performance mechanisms on preventive health outcomes. On a separate note, there is also a need for studies that examine the role of clinical preventive recommendations, such as those produced by the USPSTF, in developing reimbursable outcomes. Major purchasers of health care, such as the Pacific Business Group on Health, have integrated the USPSTF recommendations into their reimbursement structures.¹¹ Future research should explore the potential for the USPSTF recommendations to be integrated directly into health plan reimbursement structures, and should document the impact of integration on the delivery of clinical preventive services and related patient health outcomes.

REFERENCES

- ¹ Petersen LA, Woddard LD, Urech T, Daw C, and Sookanan S. Does pay-for-performance improve the quality of health care? *Annals of Internal Medicine*. 2006; 145: 265-72.
- ² Hillman AL, Ripley K, Goldfarb N, Nuamah I, Weiner J, Lusk E. Physician financial incentives and feedback: failure to increase cancer screening in Medicaid managed care. *American Journal of Public Health*. 1998; 88: 1699-701.
- ³ Rosenthal MB, Frank RG, Li Z, Epstein AM. Early experience with pay-for-performance: from concept to practice. *Journal of the American Medical Association*. 2005; 294: 1788-93.
- ⁴ Kouides RW, Bennett NM, Lewis B, Cappuccio JD, Barker WH, LaForce FM. Performance-based physician reimbursement and influenza immunization rates in the elderly. The Primary-Care Physicians of Monroe County. *American Journal of Preventive Medicine*. 1998; 14: 89-95.
- ⁵ Hillman AL, Ripley K, Goldfarb N, Weiner J, Nuamah I, Lusk E. The use of physician financial incentives and feedback to improve pediatric preventive care in Medicaid managed care. *Pediatrics*. 1999; 104: 931-5.

⁶ Roski J, Jeddloh R, An L, Lando H, Hannan P, Hall C, et al. The impact of financial incentives and a patient registry on preventive care quality: increasing provider adherence to evidence-based smoking cessation practice guidelines. *Preventive Medicine*. 2003; 36: 291-9.

⁷ Grady KE, Lemkau JP, Lee NR, Caddell C. Enhancing mammography referral in primary care. *Preventive Medicine*. 1997; 26: 791-800.

⁸ Fairbrother G, Hanson KL, Friedman S, Butts GC. The impact of physician bonuses, enhanced fees, and feedback on childhood immunization coverage rates. *American Journal of Public Health*. 1999; 89:171-5.

⁹ In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence including individual studies such as randomized controlled trials, costs, the negotiations of benefits and harms, and the evidence as a whole.

¹⁰ Respondents were asked a series of five questions about their perspectives on the reimbursement structure at their health plans: (1) Does the reimbursement structure at [health plan] reward the appropriate delivery of clinical preventive services? (2) Can you provide examples of Task Force recommendations that are integrated into the reimbursement structure? (3) We understand that certain Task Force recommendations are more difficult to incorporate into the reimbursement structure. Do you think that there are any disincentives to the appropriate delivery of clinical preventive services in the reimbursement structure? (4) When [health plan] makes a change in the reimbursement structure to reward the appropriate delivery of clinical preventive services, how long does it generally take to see changes in clinicians' delivery of the service? (5) Do you believe the reimbursement structure is an effective means for increasing the appropriate delivery of clinical preventive services?

¹¹ Schauffler HH and Rodriguez T. Exercising purchasing power for preventive care. *Health Affairs*. 1996; 15: 73-85.

The Role of Health IT in the Integration and Delivery of the USPSTF Recommendations

OVERVIEW. Health plans are using health IT tools to support the integration and delivery of the USPSTF recommendations for clinical preventive services. We explore the role of health IT in four different types of managed care plans.

Key findings include:

- ❖ Electronic medical records, community health records, clinical decision support tools, and the Internet are used to integrate and deliver the USPSTF recommendations.
- ❖ Two key challenges of using health IT to integrate and deliver the USPSTF recommendations are inconsistent integration and inadequate information exchange.
- ❖ Future research should explore new ways to use health IT in concert with the USPSTF recommendations to track patient outcomes over the long run.

As the use of health information technology (IT) increases in health care, it is apparent that health IT has enormous potential to improve the integration and delivery of recommended clinical preventive services. A growing body of research supports the cost-effectiveness of health IT tools such as electronic medical record systems (EMRs), computerized physician order entry (CPOE), and clinical decision support systems.¹ Chaudhry et al. (2006) determined that despite the costs of implementation, health IT can generate significant cost savings when used in preventive medicine settings and facilitate the delivery of preventive services. The study also concluded that the major effect of health IT on quality of health care was to enhance adherence to recommendations, particularly those focused on preventive care.

Other researchers have concluded that health IT is effective in improving outcomes related to vaccine and screening recommendations. Hillestad et al. (2005) found that the use of EMR systems to provide reminders for screenings for colorectal cancer could prevent between 17,000 and 38,000 deaths per year.² Health IT tools facilitate the

delivery of clinical preventive services in multiple settings, including primary care settings serving disadvantaged populations³ and urban health department clinics.⁴ However, little research has been conducted to explore the role of health IT in the integration and delivery of the clinical preventive services specifically recommended by the U.S. Preventive Services Task Force (USPSTF).⁵ Furthermore, no studies have examined the use of health IT tools to facilitate integration and delivery of the USPSTF recommendations in different types of managed care plans.

As part of a larger evaluation of the USPSTF recommendations for clinical preventive services, NORC at the University of Chicago explored the role of health IT tools in the integration and delivery of the USPSTF recommendations in four different types of health plans: a closed-panel health plan, open-panel health plan, hybrid health plan having both open and closed-panel characteristics, and governmental health plan. Structured interviews were conducted with over 40 health plan staff members, including Medical Directors, Directors of Quality Improvement and Health IT, Quality Improvement and Health IT staff, and Clinical Advisors (clinicians who also serve in a leadership or broader prevention role). Respondents were asked to provide examples of how the USPSTF recommendations are integrated into their health plan's IT system.⁶ This overview synthesizes key findings with respect to the role of the health IT in the integration and delivery of clinical preventive services in four different managed care plans.

Health IT Fosters Integration and Delivery of USPSTF Recommendations

Health plan staff respondents were asked whether health IT tools are utilized to integrate clinical preventive services recommendations from the USPSTF and other sources. The closed-panel plan, hybrid plan, and governmental plan utilize EMRs to integrate the USPSTF recommendations and foster information sharing among providers and patients about preventive services. While the open-panel plan did not utilize an EMR to integrate the USPSTF recommendations at the time interviews were conducted, it is in the process of developing another type of electronic health tool called a patient-centered community health record (CHR). This tool will provide an electronic reserve of health care information for all members, and the information will be viewable by all providers, fostering improvements in care coordination for patients who access care through multiple providers.

Health plans reported that clinical decision support and other health IT tools were also used to integrate the USPSTF recommendations. Order sets are used by the hybrid plan to identify patients in need of preventive services for particular conditions. The closed-panel and governmental plans utilize clinical reminders to assist medical management decision-making by prompting providers to deliver the USPSTF recommendations. The open-panel plan also uses the Internet as a hub for disseminating the USPSTF recommendations, reaching both providers and members.

Barriers to Utilizing Health IT: Inconsistent Integration and Inadequate Information Exchange

The interviews confirmed that the health plans face challenges in using health IT tools to integrate and deliver the USPSTF recommendations. One of the greatest challenges, described by respondents from the open-panel plan and the hybrid plan, is the issue of inconsistent integration of health IT tools such as the EMR. The hybrid plan operates within a larger health system that integrates the USPSTF recommendations into its EMR. However, since only approximately half of plan members access services through the health system, integration is limited. Contracted providers, who provide services to members of multiple health plans, are provided access to, but often do not use, the EMR. The end result is incomplete patient records as the EMR only captures data on patient visits to system-employed providers.

"[Health IT tools] are being used to try to bring together a fragmented system." – Director of Health IT, Open-Panel Plan

The open-panel plan faces a similar challenge – inadequate information exchange. This issue is somewhat inherent to open-panel plans where patients see multiple providers for preventive health services. A Director of Health IT from the open-panel plan described that “[health IT tools] are being used to try to bring together a fragmented care system. So if [a patient] goes to a specialist, [the provider] can identify what other treatments they’ve received. In a preferred provider organization environment, a lot of people will go [to other providers] without telling their primary care provider.” This issue may be rectified by the plan’s upcoming implementation of a CHR. However, the open-panel plan may experience additional problems related to coordinating a plan-wide CHR with affiliated providers’ existing EMRs.

Conclusions and Further Exploration

Health plans have differing capacities to use health IT to integrate and deliver the USPSTF recommendations for clinical preventive services. The governmental and closed-panel systems, where providers are employees of the plans, had the greatest integration of Task Force

recommendations using health IT, followed by the hybrid system. Finally, the open-panel system, where contracted providers may provide services under several health plans, had the least integration of the Task Force recommendations using health IT, though this may change in the future.

In the future, health plans should examine new opportunities for utilizing health IT tools to integrate and deliver the USPSTF recommendations. The health plans in this study do not currently utilize their health IT tools to monitor the delivery of the USPSTF recommendations in a systematic matter or to track long-term patient outcomes. Health IT tools have an enormous untapped potential to improve patient outcomes by increasing the delivery of clinical preventive services. Health plans would benefit from investing time and funding in developing new methods to utilize health IT in concert with the USPSTF recommendations. Next steps might include using health IT to compare long-term patient outcomes to provider delivery of the USPSTF recommendations. Future research should measure the impact of health IT on the delivery of clinical preventive services in different types of health plans. Furthermore, studies should explore which health IT tools are most effective in improving the delivery of the USPSTF recommendations.

REFERENCES

- ¹ Chaudhry B, Wang J, Wu S, Maglione M, Mojica W, Roth E, Morton SC, Shekelle PG. Systematic review: impact of health information technology on quality, efficiency and costs of medical care. *Annals of Internal Medicine*. 2006; 144: 742-752.
- ² Hillestad R, Bigelow J, Bower A, Girosi F, Meili R, Scoville R, Taylor R. Can electronic medical record systems transform health care? Potential health benefits, savings, and costs. *Health Affairs*. 2005; 24: 1103-1117.
- ³ Roetzheim RG, Christman LK, Jacobsen PB, Cantor AB, Schroeder J, Abdulla R, Hunter S, Chirikos TN and Krischer JP. A randomized controlled trial to increase cancer screening among attendees of community health centers. *Annals of Family Medicine*. 2004; 2: 294-300.
- ⁴ Burack RC, Gimotty PA. Mammography in inner-city settings: the sustained effectiveness of computerized reminders in a randomized controlled trial. *Medical Care*. 1997; 35: 921-931.
- ⁵ In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence including individual studies such as randomized controlled trials, costs, the negotiations of benefits and harms, and the evidence as a whole.

Systems-Level Changes to Encourage the Delivery of the USPSTF Recommendations

OVERVIEW. Researchers have highlighted a need for systems-level changes that will support the delivery of clinical preventive services. Little research has targeted change at the health plan level. We identify systems-level changes to encourage the delivery of the USPSTF recommendations in health plans.

Key findings include:

- ❖ Health plan staff members described several important systems-level changes that have encouraged the delivery of the USPSTF recommendations in their plans.
- ❖ Future research should examine and measure the effects of systems-level strategies on the delivery of the USPSTF recommendations over the long-term.

Despite a growing body of evidence on the efficacy of clinical preventive services in improving overall health, delivery rates remain low in primary care practice settings.^{1,2} As a result, researchers have highlighted a need for systems-level changes that will support the delivery of clinical preventive services.^{3,4} Systems-level changes may include but are not limited to changes in staff roles, responsibilities, flow of activities, performance measurement, and tools for the delivery of clinical preventive services.^{5,6} Much of the literature has focused on physician behavioral change, specifically through reminder systems that prompt the delivery of clinical preventive services,^{7,8} the use of continuing medical education,⁹ and audit and feedback.¹⁰

Studies have also explored system changes at the practice-level, specifically focusing on family medicine. Crabtree et al. (2005) analyzed the

delivery of clinical preventive services recommended by the U.S. Preventive Services Task Force (USPSTF)¹¹ in Midwestern family medicine offices, identifying important organizational features of the practices that supported the delivery of the recommendations.¹² Key findings include that practices with higher rates of clinical preventive service delivery had one or more physician champions who made prevention a priority in their practices. High delivery sites also reduced practice volume to enable physicians to spend more time with individual patients, and hired health educators and nurse practitioners to enhance delivery of services in busy offices. These findings may inform new systems-level changes to encourage the delivery of preventive services in family medicine offices. Limited research exists on systems-level changes that encourage the delivery of clinical preventive services recommended by the USPSTF at the health plan level.¹³

As part of a larger evaluation of the USPSTF recommendations for clinical preventive services, NORC at the University Chicago studied the integration and delivery of the USPSTF recommendations in four different types of health plans: a closed-panel health plan, open-panel health plan, hybrid health plan having both open and closed-panel characteristics, and governmental health plan. Structured interviews were conducted with over 40 health plan staff members, including Medical Directors, Directors of Quality Improvement and Health Information Technology (IT), Quality Improvement and Health IT staff, and Clinical Advisors (health care providers). This overview synthesizes their perspectives and identifies several systems-level changes that may encourage the delivery of the USPSTF recommendations in health plans.

Systems-Level Changes Focused on Health Plan Staff

Health plan staff respondents described that staff changes are necessary to improve the integration and delivery of the USPSTF recommendations. Respondents described the need for additional staff members focused on prevention and health IT to facilitate the delivery of the recommendations. First, respondents described the importance of having staff that are knowledgeable about recommendations for clinical preventive services. The governmental plan's Director of Quality Improvement indicated that the plan would benefit from additional prevention staff: "I have a clinical practice guidelines coordinator who puts different process action teams together. It would very much help if there was more than one person, at least in a back-up role, to work on these types of prevention activities."

"I have a clinical practice guidelines coordinator who puts different process action teams together. It would very much help if there was more than one person, at least in a back-up role, to work on these types of prevention activities." – Director of Quality Improvement, Governmental Plan

Second, respondents indicated that health plans need additional health IT staff to integrate the IT and clinical components of the plan for optimal delivery of the USPSTF recommendations. Specifically, a Clinical Advisor commented that "to ensure the delivery of clinical preventive services recommendations from a development, implementation, and usability perspective, IT resources must be supported directly by clinical resources." A Director of Quality Improvement also said that the plan would benefit from having more health IT staff to integrate the recommendations electronically.

Third, respondents from the hybrid plan noted that utilizing nursing staff to deliver counseling recommendations for tobacco cessation encourages the delivery of counseling recommendations in busy clinical practices. A Clinical Advisor noted that the plan recently implemented a nurse-driven tobacco cessation program that puts basic decision support tools in front of the nurse and prompts him/her to do tobacco cessation counseling. The Clinical Advisor found this program to be useful because "it's simple, short, and one less thing for the doctor." The hybrid plan's positive experience with the nurse-led program highlights an opportunity for plans to incorporate nurses' expertise into the delivery of certain clinical preventive services. Additionally, this plan's experience suggests the need for new clinical decision support tools for use by nurses.

"I don't think we have changed staff as much as we have reorganized the thinking amongst existing staff. We are moving the organization to think in terms of performance and quality." – Medical Director, Open-Panel Plan

While the governmental and hybrid plans emphasized the need for new staff to facilitate the delivery of the recommendations, the closed-panel and open-panel plans discussed the need to reorganize their current staff. A Clinical Advisor from the closed-panel plan noted that "it's less about what new staff are needed and more about how to make the best use of the staff we have." Similarly, a Medical Director from the open-panel plan stated: "I don't think we have changed staff

as much as we have reorganized the thinking amongst existing staff. We are moving the organization to think in terms of performance and quality."

Other Systems-Level Changes

Many respondents highlighted that each of their health plans have made a commitment to building a culture of prevention. Research supports that identifying a focus for preventive care within an organization is a key enabling factor to preventive service delivery.¹⁴ Each of the health plans have

pursued a stronger organizational culture of prevention. For example, the Medical Directors and Directors of Health IT and Quality Improvement promote prevention and the delivery of the USPSTF recommendations through newsletters and quality improvement programs related to prevention. The governmental plan's leadership works directly with plan staff on issues related to clinical preventive service delivery. Training sessions and "hands on" continuing education activities are conducted to ensure that staff members have timely information about clinical preventive services recommendations and targets.

The closed-panel plan has implemented two effective systems-level strategies to encourage the delivery of the USPSTF recommendations: involving providers in the development of its clinical practice guidelines and enabling staff from various departments to participate in the delivery of clinical preventive services. A Director of Quality Improvement discussed that "depending on the recommendation, different people need to be involved in the implementation. We involve nursing staff, people who work on our electronic medical record, primary care staff, and people from internal medicine." According to respondents, making prevention an organizational focus and system-wide priority can improve the delivery of the USPSTF recommendations.

Finally, respondents across health plans discussed that clinical decision support tools such as clinical reminders and electronic medical records have facilitated the delivery of the USPSTF recommendations. Future systems-level strategies will likely focus on utilizing health IT tools and quality improvement interventions to increase the delivery of clinical preventive services recommendations.

Conclusions and Further Exploration

While research demonstrates the value of prevention, clinical preventive services delivery rates remain relatively low. Reflecting on the barriers associated with improving the delivery of preventive services in clinical practice, Pommerenke and Dietrich (1992) stated: "The status quo is difficult to change and medical practice is no exception. The importance of this problem cannot be over-emphasized."¹⁵ Changing the status quo, and increasing the delivery of clinical preventive services can be accomplished by systems-level changes. Respondents described several important systems-level changes that have encouraged the delivery of the USPSTF recommendations in their health plans. Respondents also highlighted current staffing needs, such as more staff with a solid understanding of the preventive health recommendations and additional health IT staff. The hybrid plan's experience with a nurse-driven tobacco cessation program exemplifies the changing role of nurses, and their potential to increase the delivery of certain USPSTF recommendations. Strong leadership at the health plan level that fosters a plan-wide culture of prevention is another enabling factor that encourages the delivery of the USPSTF recommendations.

Future research should explore the systems-level changes and strategies that health plans have employed to increase the delivery of the USPSTF recommendations. Specifically, what approaches are used by closed-panel versus open-panel plans? What systems-level changes have been implemented? Which changes have had the greatest impact on the delivery of clinical preventive services? Longitudinal studies could potentially be used to explore these research questions, and examine and measure the effects of systems-level strategies on the delivery of the USPSTF recommendations over the long-term.

REFERENCES

- ¹ Kottke TE, Solberg LI, Brekke ML, Cabrera A, Marquez MA. Delivery rates for preventive services in 44 Midwestern clinics. *Mayo Clinic Proceedings* 1997;72:515-523.
- ² Stange KC, Flocke SA, Goodwin MA, Kelly RB, Zyzanski SJ. Direct observation of rates of preventive service delivery in community family practice. *Preventive Medicine* 2000;31:167-176.
- ³ Crabtree BF, Miller WL, Tallia AF, Cohen DJ, DiCicco-Bloom B, McIlvain HE, Aita VA, Scott JG, Gregory PB, Stange KC, McDaniel RR. Delivery of clinical preventive services in family medicine offices. *Annals of Family Medicine* 2005; 3(5) 430- 435.
- ⁴ Jackson PL. A systems approach to delivering clinical preventive services. *Pediatric Nursing Journal* 2002; 28(4) 377-381.
- ⁵ Agency for Healthcare Research and Quality. (2001, October). Put prevention into practice, a step-by-step guide to delivering clinical preventive services: A systems approach (AHRQ Publication No. APPIP01-0001). Rockville, MD: Author.
- ⁶ Crabtree et al., 2005.
- ⁷ Dexter PR, Perkins S, Overhage JM, Maharry K, Kohler RB, McDonald CJ. A computerized reminder system to increase the use of preventive care for hospitalized patients. *New England Journal of Medicine* 2001;345(13):965 –70.
- ⁸ Ornstein SM, Garr DR, Jenkins RG, Rust PF, Arnon A. Computer-generated physician and patient reminders: tools to improve population adherence to selected preventive services. *Journal of Family Practice* 1991; 32(1):82–90.
- ⁹ Davis D, O'Brien MA, Freemantle N, et al. Impact of formal continuing medical education: do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? *Journal of the American Medical Association*. 1999;282:867-874.
- ¹⁰ Greco PJ, Eisenberg JM. Changing physicians' practices. *New England Journal of Medicine* 1993; 329:1271-1273.
- ¹¹ In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence including individual studies such as randomized controlled trials, costs, the negotiations of benefits and harms, and the evidence as a whole.
- ¹² Crabtree et al., 2005.
- ¹³ Thompson RS. What have HMOs learned about clinical preventive services? An examination of the experience at group health cooperative of Puget Sound. *The Milbank Quarterly* 1996; 74(4): 469-509.
- ¹⁴ Ibid, 478.
- ¹⁵ Pommerenke FA and Dietrich A. Improving and maintaining preventive services. Part 1: applying the patient model. *Journal of Family Practice*. 34: 86-91.

Delivering the USPSTF Recommendations in a Rural Health Care Setting

OVERVIEW. Rural populations are less likely to receive the recommended clinical preventive health services. We explore the challenges that one health plan faces in delivering the USPSTF recommendations to its rural patient population.

Key findings include:

- ❖ Rural members face barriers to accessing preventive services, such as transportation and limited service availability in rural areas.
- ❖ Information exchange about preventive service delivery is more difficult in rural areas.
- ❖ Despite barriers, the stability of the rural population presents unique opportunities for delivering the USPSTF recommendations.
- ❖ Future research should explore the delivery of the USPSTF recommendations in rural communities on a wider scale.

Research suggests that rural populations may have lower access to and utilization of preventive health services than urban populations.¹⁻⁶ In a study assessing the utilization of preventive health care services by rural women and men, Casey et al. (2001) found that rural residents are significantly less likely than urban residents to obtain certain preventive health services and are further behind in meeting the *Healthy People 2010* objectives. Evidence also suggests that certain subpopulations, such as rural women, are at a particular disadvantage for receiving the recommended clinical preventive services.^{7,8} Additionally, differences in the utilization of preventive services between rural and urban residents may also vary by type of service.⁹

Access and utilization disparities between rural and urban populations may be a result of cultural barriers to the use of preventive health services, lack of primary health care providers in rural communities, and rural-urban differences in out-of-pocket costs for preventive services. Other factors may also exacerbate these disparities. For example,

rural populations typically have to travel longer distances to access preventive health care services, impacting utilization.¹⁰ Differential access to preventive services is a key public policy issue, as research suggests that reduced access is associated with an increased risk for mortality or the disabling effects of various health conditions.¹¹

Few studies have explored rural populations' access to and utilization of clinical preventive services specifically recommended by the U.S. Preventive Task Force (USPSTF).¹² Furthermore, no studies have explored the barriers that rural health plans face in delivering the USPSTF recommendations to a rural patient population.

As part of a larger evaluation of the USPSTF recommendations for clinical preventive services, we studied the challenges associated with delivering the USPSTF recommendations in four different types of health plans, including a hybrid health plan (where some providers are plan-affiliated employees and others are independent contractors to the plan) that serves a large rural population. Given that few plans today can be characterized as purely open-panel (where physicians are independent contractors of the health plan) or closed-panel (where physicians are plan-affiliated employees), it is particularly informative to examine the integration of the USPSTF recommendations in a hybrid plan, which encompasses characteristics from both models. The mixed-model nature of the hybrid plan presents a unique opportunity to compare key health plan variables of open- and closed-panel health plans within a rural setting.

Structured interviews were conducted with nine health plan staff members at the rural plan, including a Director of Quality Improvement, Directors of Health Information Technology (IT), Quality Improvement and Health IT staff, and Clinical Advisors (health care providers who also serve in a leadership or broader prevention role at the plan). This overview presents these informants' perspectives on the challenges that the plan faces in delivering the USPSTF recommendations to a rural patient population.

Barriers to Delivering the USPSTF Recommendations

“Just having immediate access to colonoscopies and mammograms is an issue for members in rural areas.”
– Clinical Advisor

Foremost among the challenges associated with delivering the USPSTF recommendations to a rural patient population was the lack of local providers of certain clinical preventive services and the long travel distances often required to reach the nearest service provider. According to a Clinical Advisor, “just having immediate access to colonoscopies and mammograms is an issue for members in rural areas.” In

addition, respondents noted that rural members often have to travel longer distances to receive the recommended clinical preventive services than their urban counterparts: “We have counties that don’t have a gastroenterologist. And they’re rural. [People] don’t want to travel.”

One population that faces severe barriers to receipt of clinical preventive services is the rural elderly. The rural plan is located in a state with a larger elderly population than the national average, and within the state, the rural population is disproportionately older than the non-rural population. As a result, a large portion of the plan’s rural membership is elderly. A Clinical Advisor noted that utilization of preventive services by the elderly is inhibited by the rural geography: “There are travel and convenience issues. These issues are more important in [the elderly] population. Most times for specialized services, the question is: where is the nearest hospital?”

Obesity, physical inactivity, and substance abuse are common issues in the plan’s rural member population as well. This finding supports a body of evidence that suggests that rural populations are more affected by these health conditions than non-rural populations.^{13,14} In order to care for this large subpopulation, Clinical Advisors noted that many of the plan’s “lifestyle” preventive services recommendations are related to diet and weight management, as well as substance abuse: “Our rural population has a real obesity problem. [It’s unclear] whether that’s because of our rural nature or [the state] in general. But many of the lifestyle [clinical preventive services] recommendations are related to weight and diet, issues that are difficult for us in our rural population.” Another respondent indicated that the plan “has no shortage of patients who smoke.” The plan has responded by developing new quality improvement programs to increase the delivery of tobacco cessation counseling.

“Our rural population has a real obesity problem. [It’s unclear] whether that’s because of our rural nature or [the state] in general. But many of the lifestyle [clinical preventive services] recommendations are related to weight and diet, issues that are difficult for us in our rural population.”
– Clinical Advisor

The health plan’s large rural service area also poses some challenges for the dissemination of the USPSTF recommendations. Specifically, Clinical Advisors described the challenge of adequately communicating clinical preventive services recommendations from the USPSTF and other sources to rural providers across the plan’s large service area. The respondent noted that “with over 40

provider sites across a large area, communication of programs and recommendations across all of our providers is a difficult thing.”

From an operational standpoint, the plan also faces geographic challenges to collecting and monitoring data on the delivery of the USPSTF recommendations in its rural areas. Approximately half of the plan’s providers are located in rural settings across a wide service area. Since most of these plan providers are not affiliated with the plan’s parent health system, they do not have access to the system-wide electronic medical record (EMR) and other health IT tools. Quality Improvement Staff and Clinical Advisors described that this aspect creates challenges to monitoring whether patients in rural areas are receiving the recommended clinical preventive services: “For patients in the outer edges of our service area who get services outside of the health system, the results come back on paper. There is no clean loop of closure for those folks.”

Quality Improvement Staff also indicated that, in order to track service delivery for rural members (whose providers often do not utilize an EMR), it is sometimes necessary for them to travel to remote provider locations to collect the data: “If we have to collect data manually, we may have geographical challenges to go get data. We may drive three hours to get one chart. That is the nature of the beast I guess.” These examples illustrate the quality improvement and technological challenges associated with serving a large rural patient population where a significant proportion of providers are not plan-affiliated employees.

Are Certain Types of USPSTF Recommendations Easier to Deliver in Rural Settings?

We also asked respondents whether certain types of USPSTF recommendations are easier to integrate and deliver than others, given that the health plan serves a rural population in a rural setting. Several respondents indicated that certain recommendations are, in fact, easier to deliver than others because of the plan’s rural nature.

A Clinical Advisor suggested that the plan finds it easier than its urban counterparts to deliver recommendations for immunizations, for example: “We don’t struggle as much with delivering immunizations. The transient population that you deal with in the inner cities is not necessarily a problem here.” Another respondent elaborated on the plan’s stable patient population, saying “people stay forever.” As described by another respondent, patient turnover is less of a problem for

***“We don’t struggle as much with delivering immunizations. The transient population that you deal with in the inner cities is not necessarily a problem here.”
– Clinical Advisor***

providers, making it easier to deliver clinical preventive services recommendations: “One of the things we have seen in our service area that is different than in cities is that people we care for tend to have roots in the area. There is less of a turnover of patients across our service area. There is some switch from provider to provider, but we have a more stable patient population.”

With a highly stable patient population, the plan has an enhanced ability to track patient outcomes over the long-term – something that it hopes to do more of in the future. One Clinical Advisor described that “we probably have more longitudinal data on patients than [other plans]. It’s easier to find people. We’d have the ability to follow the effects of an intervention over a decade.” With more longitudinal data on its patients, the plan has the ability to explore the impact of quality improvement programs over time.

Conclusions and Further Exploration

This overview suggests that rural health plans face additional barriers to delivering the USPSTF recommendations for clinical preventive services than their non-rural counterparts, as well as some advantages. According to respondents from the rural health plan, rural populations face barriers such as transportation and limited service availability in some areas. The plan also has difficulty communicating the recommendations to all of its providers across the rural landscape. While access to a common EMR is helpful for plan providers that are affiliated with the plan's parent health system, information exchange is lacking for the 50 percent of providers that are not directly employed by the system. The fact that the majority of these providers are located in rural areas at a distance from the plan's headquarters further inhibits the plan's ability to track and monitor the data on provision of services, and execute quality improvement interventions. Despite these challenges, the rural environment does present some unique opportunities for delivering the USPSTF recommendations. Since the member population is more stable, certain recommendations such as immunizations, are easier to deliver and track. In addition, the plan has more longitudinal data on its patients, which is useful in assessing the long-term value of quality improvement interventions.

Future research should explore the delivery of the USPSTF recommendations in rural communities on a wider scale. Do providers in rural communities deliver the USPSTF recommendations in a systematically different way than providers in urban communities? For example, do providers in rural communities rely on their own judgment rather than the USPSTF recommendations because they treat the same patients for decades, and perhaps feel they know what is best for them? From a systems perspective, as health plans develop advanced health IT solutions, will providers have an improved ability to deliver the USPSTF recommendations in rural communities? On a similar note, will health IT help rural health plans to track service delivery and patient outcomes over time? Studies should explore these research questions in order to improve the delivery of the USPSTF recommendations in rural communities.

As these research questions are explored in greater detail, we recommend that research on hybrid health plans be a key component of analyzing the impact of plan structure on the delivery of clinical preventive services. Given their open- and closed-panel features, further research on hybrid health plans provides a unique opportunity to understand the impact of plan structure on the delivery of clinical preventive services in rural settings.

REFERENCES

- ¹ Casey MM, Call KT, Klingner JM. Are rural residents less likely to obtain recommended preventive healthcare services? *American Journal of Preventive Medicine*. 2001;21(3).
- ² Ricketts TC, Johnson-Webb KD, Randolph RK. Populations and places in rural America. In Ricketts (Ed.), T. C. *Rural health in the United States*. 1999. New York: Oxford University Press.
- ³ Amery CH, Miller MK, Albrecht SL. The role of race and residence in determining stage at diagnosis of breast cancer. *Journal of Rural Health*. 1997; 13 (2), 99–108.
- ⁴ Higginbotham JC, Moulder J, Currier M. Rural v. urban aspects of cancer: First-year data from the Mississippi Central Cancer Registry. *Family and Community Health*. 2001; 24 (2), 1–9.
- ⁵ Larson SL, Fleishman JA. Rural-urban differences in usual source of care and ambulatory service use: Analyses of national data using Urban Influence Codes. *Medical Care*. 2003; 41 (Suppl. 7), III65–III74.
- ⁶ Mayne L, Earp J. Initial and repeat mammography screening: Different behaviors/different predictors. *Journal of Rural Health*. 2003; 19 (1), 63–71.
- ⁷ Hughes Gaston M. 100% access and 0 health disparities: Changing the health paradigm for rural women in the 21st century. *Women's Health Issues*. 2001; 11 (1), 7–16.
- ⁸ Carr WP, Maldonado G, Leonard PR, Halberg JU, Church TR, Mandel JH, Dowd B, Mandel JS. Mammogram utilization among farm women. *Journal of Rural Health*. 1996; 12(4 Suppl): 278-290.

⁹ Zhang P, Tao G, Irwin KL. Utilization of preventive medical services in the United States: a comparison between rural and urban populations. *Journal of Rural Health* 2000; 16(4): 349-356.

¹⁰ Schur CL, Franco SJ. Access to health care. In T. C. Ricketts (Ed.), *Rural health in the United States*. 1999. New York: Oxford University Press.

¹¹ Ibid.

¹² In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence including individual studies such as randomized controlled trials, costs, the negotiations of benefits and harms, and the evidence as a whole.

¹³ Patterson PD, Moore CG, Probst JC, Shinogle JA. Obesity and physical inactivity in rural America. *Journal of Rural Health*. 2004; 20(2): 151-159.

¹⁴ Van Gundy K. Substance abuse in rural and small town America. *Carsey Institute*. 2006; 1(2): 1-38.

The Impact of Health Plan Structures on the Delivery and Integration of the USPSTF Recommendations

OVERVIEW. No research has examined whether the structure of health plans, and the influence this has on the relationship between the plan and provider, may impact the integration and delivery of the USPSTF recommendations for clinical preventive services.

Key findings include:

- ❖ Health plans structures have impacted the ability of health plans to adopt and integrate the USPSTF recommendations.
- ❖ As health plan structures continue to evolve, future research should track provider usage of clinical preventive services recommendations across different types of health plans, as well as their perceptions of the delivery of clinical preventive services over time.

The structure of managed health care plans has changed dramatically over the last twenty years. Plans have evolved with differing structures that influence the level of plan versus provider control and member choice. In the 1980s, health maintenance organizations (HMOs) were typically either open-panel plans or closed-panel plans.¹ In an open-panel plan, any qualified physician who accepts the HMO's contract rate is allowed to join as a participating provider (e.g., independent-practice model and network model); whereas, in a closed-panel plan providers are direct, exclusive employees of the health plan (e.g., staff model HMOs). In the late 1990s, the distinctions between closed and open-panel HMOs blurred substantially. Many HMOs now encompass characteristics of both open and closed-panel plans. These plans are often referred to as hybrid plans or mixed-model health plans.

Limited research has explored how the relationships between managed care organizations (MCOs) and providers may have larger implications for other health care variables, such as the integration and delivery of preventive services recommendations. Rigotti (2002) et al. explored tobacco-dependence treatment guidelines of 11 staff-model MCOs, concluding that staff model plans (closed-panel health plans), have more direct control over the implementation of tobacco cessation guidelines than do independent-practice models and network-models (open-panel health plans).³ Another study, Mehrotra et al (2006) examined the rates of implementation of three types of preventive services. This study revealed that integrated medical groups (for the purposes of this study these were akin to closed-panel plans) scored better than the independent practice associations (akin to open-panel plans) on preventive quality measures, while hybrid models fell between the two. Finally, studies have explored provider attitudes towards clinical preventive services recommendations, concluding that primary care providers in two staff model (closed-panel) HMOs and one mixed-model (hybrid) HMO had highly favorable attitudes towards clinical preventive services recommendation implementation to increase quality of care.^{4,5,6} In contrast, primary care providers in independent group practice (open-panel) were less likely to have favorable attitudes toward clinical preventive services recommendations.⁷

No research has examined whether the structure of health plans, and its influence on the relationship between the plan and provider, may impact the integration and delivery of the U.S. Preventive Services Task Force (USPSTF) recommendations for clinical preventive services.⁸ As part of a larger evaluation of the USPSTF recommendations, NORC at the University Chicago studied the integration and delivery of the recommendations in four different types of health plans: a closed-panel health plan, open-panel health plan, hybrid health plan having both open- and closed-

panel characteristics, and governmental health plan. Providers of the closed-panel and governmental plans are employees of the plans, whereas providers of the open plan are independent contractors that may have relationships with multiple health plans. The hybrid plan exists in the middle of this spectrum, since approximately half of the providers are employees of the plan's affiliated health system, and the other half are contractors. Qualitative interviews were conducted with over 40 health plan staff members, including Medical Directors, Directors of Quality Improvement and Health Information Technology (IT), Quality Improvement and Health IT staff, and Clinical Advisors (clinicians who also serve in a leadership or broader prevention role). This overview explores how health plan structure impacts other variables related to the integration of the USPSTF recommendations.

System Structures

Health plan system structures are largely characterized by two key factors: 1) the health plan-provider relationship (e.g., are providers employees or contractors?); and 2) the centralization of the decision-making at the plan (e.g., does the plan have local/regional autonomy to make decisions or are decisions made at a centralized headquarters?). While not a structural issue, it is clear that a plan's corporate culture, values, and mission also affect its focus on prevention activities, making it difficult to disentangle the influences on decisions related to integration of the USPSTF recommendations in some instances.

Focus on Prevention

Closed-panel plans, in theory, should have an easier time implementing prevention-focused activities than other types of health plans because the health plan has more direct control over providers (who are employees of the plan). The closed-panel plan in our study does have a strong and public focus on prevention, given plan staff are actively involved in clinical preventive services research and that the plan employs a highly aggressive public prevention campaign. However, while the closed-panel plan has a solid focus on prevention, the governmental, hybrid, and open-panel health plans also make prevention a paramount priority, suggesting that the plan-provider relationship may not be the determining factor of whether health plans have a strong focus on prevention. Since all of the health plans have a strong culture of prevention, it is possible that plan culture, values and mission may have a stronger influence on whether health plans have an underlying mission of prevention.

Health Information Technology

Our study supports the body of existing research that suggests that health plan structure/organizational type strongly predicts how well the plan implements reminder systems for delivering preventive care. We found that plans

Plans with more provider control like the closed-panel and governmental plans were more successful in implementing clinical reminder systems than plans with less control like the open-panel and hybrid plans.

with more provider control like the closed-panel and governmental plans were more successful in implementing clinical reminder systems than plans with less control like the open-panel and hybrid plans. The open-panel and hybrid plans are not as well-positioned to integrate the USPSTF recommendations via health information technology because all providers are not employees of the health plans. In the open-panel plan, where all providers are independent contractors to the health plan, health information exchange is more tenuous. The open-panel plan does not currently have an electronic medical record, and thus relies on paper-based patient reminders. While the open-panel plan is making strides towards implementing a patient-based community health record (CHR) in the

near future, there may be additional problems related to coordinating a plan-wide CHR with providers' existing EMRs.

In addition, plan-provider relationships play a big role in the hybrid plan's ability to integrate the USPSTF recommendations using health IT. Given its open- and closed-panel features, the hybrid plan operates within a larger health system that integrates the USPSTF recommendations into its EMR. While the system has a sophisticated EMR, since only approximately half of plan members access services through health system providers, integration is limited and uneven. Contracted providers, who provide services to members of multiple health plans, are provided access to, but often do not use, the EMR. The end result is incomplete patient records as the EMR only captures data on patient visits to system-employed providers. As a result the hybrid plan has a reduced ability to integrate the USPSTF recommendations using health information technology.

Quality Improvement

The hybrid plan's mixed-model structure also affects its strategy for quality improvement. Given that not all of the plan providers are employees of the health plan who utilize the EMR, quality improvement can be very difficult and costly. Essentially, the mixed-model structure of the plan makes it more difficult to track and monitor members. For example, the quality improvement activities involve a large patient outreach component (e.g., phone calls, letters, and mailings) because many plan members are not recorded in the system EMR. According to one Clinical Advisor, who had been heavily involved in a quality improvement effort to increase the delivery of colorectal cancer screenings, the EMR is an important tool and potentially could be more useful if all of the plan's providers utilized it: "There's always another panel of patients you're not seeing. If you don't have an EMR – if you have paper charts – you don't even know that you have them. If you have EMR, you can find them." The hybrid plan's mixed-model structure necessitates that it employ a targeted patient outreach component for its overall quality improvement strategy.

The closed-panel, open-panel, and governmental health plans are heavily involved in quality improvement activities as well, which may be the result of their focus on prevention as a part of their organizational values and mission. One Clinical Advisor from the closed-panel plan indicated that "[quality improvement] is all we do. Every day is about trying to pick a priority and make it happen." However, their structures do not impact their strategies for quality improvement as much as is the case at the hybrid plan.

Provider Incentives

Research suggests that incentives relating to quality of care and patient satisfaction are more frequently employed in closed-panel health plans, which have more direct control over their providers.⁹ In our study, while the closed-panel plan did not directly incentivize individual providers to deliver clinical preventive services, high-performing medical groups receive other in-kind bonuses, such as group meals, and public recognition. The closed-panel plan works closely with its providers to improve delivery rates of clinical preventive services, and has aggressive quality improvement techniques for providers who fall below acceptable margins.

The hybrid plan also has a sophisticated pay-for-performance program which provides financial rewards to high performing health plan staff and providers. This feature has likely been facilitated by the plan's corporate interest in pay-for-performance so that structure may not be the primary factor in initiating the incentive program.

On the opposite end of the spectrum, the open-panel plan does not currently promote incentives to encourage the delivery of clinical preventive services. The governmental plan falls somewhere in

between, as there has been a recent movement towards adopting some type of performance based reimbursement for providers. Given the governmental plan's top-down structure, whereby all plan changes must be approved at the national headquarters, novel strategies and techniques such as pay-for-performance become more difficult to implement at the local, site level.

Adoption of Recommendations

The process used to adopt and integrate the USPSTF recommendations differs dramatically across health plans, though there are some notable trends related to system structure. The closed-panel plan and governmental plans are highly centralized, in that they comply with recommendations for clinical preventive services issued by their respective systems-level or national headquarters. Both plans have strong leadership teams at the systems-level that are heavily involved in the development of guidelines for clinical preventive services. In contrast, the hybrid and open-panel plans have more local control over the adoption of recommendations. Both plans incorporate review and input from providers that are plan-affiliated employees as well as those that are contractors.

The process used to integrate the USPSTF recommendations differs dramatically across health plans, though there are some notable trends related to system structure.

Conclusions and Further Exploration

Health plan structures clearly impact variables related to the integration of the USPSTF recommendations. However, the degree to which structure versus corporate values is the mitigating factor in pursuing prevention activities is not always clear, as in the case of provider incentives for quality. Future research should further explore how the integration of the USPSTF recommendations is impacted by system structure. Specifically, studies should address the degree to which health plan corporate culture and values affect the plan's ability to integrate the recommendations as compared to structural components such as plan-provider relationships and centralization.

The issue of system structure is particularly interesting in mixed-model plans which encompass features of open- and closed-panel plans. Hybrid plans have an untapped potential to serve as "learning laboratories," enabling researchers to compare characteristics of open versus closed-panel health plans while controlling for systems-level differences. Inasmuch as hybrid plans have been understudied, future research should also explore whether the mixed-model structure underlying hybrid health plans offers any unique incentives for providers to deliver clinical preventive services.

Finally, additional research is recommended to track provider usage of clinical preventive services recommendations across different types of health plans, as well as provider perceptions of the delivery of clinical preventive services over time. As health plan structures continue to evolve, it will be important to understand the associated impacts on preventive care.

REFERENCES

- ¹ Kongstvedt, P. 2003. Essentials of managed health care. 4th ed. Sudbury, MA: Jones and Bartlett.
- ² Christianson JB, Warrick LH, Wholey DR. Physicians' perceptions of managed Care: a review of the literature. *Medical Care Research & Review*. 2005; 62(6): 635-675.
- ³ Rigotti NA, Quinn VP, Stevens VJ, Solberg LI, Hollis JF, Rosenthal RC, Zapka JG, France E, Gordon N, Smith S. Tobacco-control policies in 11 leading managed care organizations: progress and challenges effective clinical practice. *American College of Physicians Journal Online: Effective Clinical Practice*. 2002.

⁴ Salem-Schatz SR, Gottlieb LK, Karp MA, Feingold L. Attitudes about clinical practice guidelines in a mixed-model HMO: The influence of physician and organizational characteristics. *HMO Practice*. 1992; 11 (3): 111-17.

⁵ Shye D and Brown JB. Primary care HMO clinicians' opinions about clinical practice guidelines. *HMO Practice*. 1995; 9(3): 111-15.

⁶ Weingarten S, Stone E, Hayward R, Tunis S, Pelter M, Huang H, Kristopaitis, R. The adoption of preventive care practice guidelines by primary care physicians: do actions match intentions? *Journal of General Internal Medicine*. 1995; 10 (3): 138-44.

⁷ Salem-Schatz et al., 1997.

⁸ In 1984, the U.S. Public Health Service created the USPSTF as an independent panel of experts in primary care and prevention that systematically review the evidence of effectiveness and develop recommendations for clinical preventive services. The Agency for Healthcare Research and Quality (AHRQ) began sponsoring USPSTF activities in 1998 and includes the USPSTF recommendations as part of their diverse Prevention Portfolio. The USPSTF recommendations are developed by a team of clinicians and are based on a thorough review of evidence including individual studies such as randomized controlled trials, costs, the negotiations of benefits and harms, and the evidence as a whole.

⁹ Grumbach K, Osmond D, Vranizan K, Jaffe D, Bindman AB. Primary care physicians' experience of financial incentives in managed-care systems. *New England Journal of Medicine*. 1998; 339 (21): 1516-21.

VI. CONCLUSION

The experiences captured in this report depict the usage and integration of the USPSTF recommendations at the health plan level. Health plans consulted for this study have adopted, integrated, and delivered the USPSTF recommendations for clinical preventive services. They have also demonstrated substantial progress in the use of health IT tools, and quality improvement techniques to integrate recommendations for clinical preventive services. The unique perspectives of the respondents have highlighted the challenges and barriers to the integration and delivery of the Task Force recommendations and identified new ways to improve the utility and dissemination of the recommendations.

To assess our findings, we present our lessons learned. We then conclude by presenting specific ways for AHRQ to move forward given these findings and also suggest key areas for future study.

Lessons Learned

From the health plans' experiences, we compiled our key findings and lessons learned to inform the AHRQ Prevention Team; the USPSTF; researchers and policymakers; and health plan administrators, clinicians, and other implementers of clinical preventive health services recommendations. Our lessons learned are in four key areas. The first key area is the impact of health plan structures on the integration of the USPSTF recommendations. The remaining three areas focus on our study findings in relation to our three evaluation research questions, which have guided the development and direction of the study.

1. Health plan structures impact the integration and delivery of the USPSTF recommendations.

Different health plan models were selected to explore whether health plan structure has an impact on the integration and delivery of the USPSTF recommendations. We found that health plan structure clearly impacts variables related to recommendation integration and delivery, including health information technology, quality improvement, adoption, and provider incentives.

- Health plan system structures are largely characterized by two key factors: 1) the health plan-provider relationship (e.g., are providers employees or contractors?); and 2) the centralization of the decision-making at the plan (e.g., does the plan have local/regional autonomy to make decisions or are decisions made at a centralized headquarters?). While not a structural issue, it is clear that a plan's corporate culture, values, and mission also affect its focus on prevention activities making it difficult to disentangle the influences on decisions related to integration of USPSTF recommendations in some instances.
- Highly centralized plans that also have direct control over providers, such as the closed-panel plan, have a strong ability to integrate the USPSTF recommendations via health information technology, whereas the opposite is true for more decentralized plans such as the open-panel plan.
- Plans with mixed-model structures like the hybrid plan are unique because they have features of both open and closed-panel health plans. Approximately half of the hybrid plan's members seek services from plan-affiliated, system-system employed providers; the remainder seeks services from contracted providers. The impact of this mixed-model structure on health IT is quite interesting as patient records and information are inconsistent

and incomplete, making it difficult to integrate, deliver, and track the delivery of the USPSTF recommendations. Contracted providers, who provide services to members of multiple health plans, are provided access to, but often do not use, the EMR. The hybrid plan must employ aggressive patient outreach efforts which include phone calls and mass mailings.

2. Clinical preventive services, and specifically the USPSTF recommendations, are integrated into each of the health care plans.

The USPSTF recommendations for clinical preventive services are being integrated into each of the four health plans, though the degree of integration varies across plans. While it is more difficult to ascertain the level of delivery at each of the plans, our conversations with respondents indicated that the perception is that many of the “A” and “B” recommendations are being delivered. The USPSTF recommendations play an important role in the process that health plans use to develop and adopt their own recommendations or policies for clinical preventive services; each health plan has its own unique process for adopting clinical preventive services recommendations from the USPSTF and other sources, which largely depends on the health plan’s system structure.

- The majority of respondents were familiar with the USPSTF recommendations, although this familiarity ranged from having heard of the recommendations to actually working with the recommendations. Many of the respondents were unfamiliar with which clinical preventive services recommendations are “A” and “B” recommendations. Others did not recognize the USPSTF grading scheme at all.
- Health plans integrate the USPSTF recommendations into their plans in a number of ways. The USPSTF recommendations are: integrated in health plan provider manuals on clinical preventive services, performance measures, or other publications; integrated electronically using health information technology tools such as electronic medical records, clinical reminders, and order sets for clinicians; and incorporated into the plan’s patient health education materials that are distributed to the member population. Health plans also engage in quality improvement activities to increase the appropriate delivery of the recommendations, and the majority of plans utilize their reimbursement structure to reward the delivery of clinical preventive services.

3. Health plans face common challenges with respect to the delivery of clinical preventive services.

Health plans face a number of common challenges and barriers with regard to adopting, integrating, and delivering the USPSTF recommendations, and recommendations for clinical preventive services, more generally.

- Identified barriers include: time constraints; patient resistance; staff availability; availability of clinical preventive services in some practice settings; geographic barriers to care; IT barriers; process-related barriers; and difficulties associated with adopting and integrating counseling recommendations. These challenges are not due to fundamental issues with the Task Force recommendations, but rather the result of larger systems-level challenges that health plans face with respect to adopting and integrating clinical preventive services recommendations.
- Respondents indicated that certain types of recommendations are easier to adopt and integrate than others. Recommendations that are not associated with specific measures are more difficult to integrate and monitor in the plan’s EMR.

4. AHRQ can contribute to the increased implementation of USPSTF recommendations within health plans.

AHRQ could play a key role in improving the dissemination of the Task Force recommendations and methodology in a few key ways. First, AHRQ should focus on disseminating the Task Force recommendations to health plan staff. Second, AHRQ should disseminate more information about the Task Force’s methodology for selecting and grading recommendations to health plan staff. While Clinical Advisors have a strong knowledge of the methodology used by the Task Force, Quality Improvement Staff across plans do not. Third, AHRQ could improve the dissemination of its line of tools and products that incorporate the USPSTF recommendations, such as the *Put Prevention into Practice* materials, the *Electronic Preventive Services Selector*, the pocket manual of recommendations, and email updates.

- Respondents requested that AHRQ provide health plans with new ways to improve integration of the USPSTF recommendations such as: clinical decision support tools for nurses administering Task Force counseling recommendations; patient level prevention tools; cost information about preventive services and programs recommended by the Task Force; and procedure codes or performance measures that coincide with Task Force recommendations.
- There was some agreement that the Task Force’s prevention priorities are aligned with payer expectations and quality indicators. However, responses varied on the degree of alignment with these variables. Respondents across plans described that the prevention priorities are aligned moderately well HEDIS measures.
- Many respondents believe that the USPSTF’s prevention priorities are not aligned well with consumer demand. Several reasons were cited, including that prevention and wellness are the last priorities for large purchasers of health care, and that consumers do not have adequate knowledge and tools to request the appropriate screenings from providers. Consumer education was highlighted as an important priority for AHRQ in the future.

Next Steps for AHRQ

Given our key findings and lessons learned, NORC has prepared several recommendations for AHRQ, which are intended to help guide future endeavors with regard to the USPSTF recommendations. These recommendations are targeted to reduce barriers to the adoption, delivery, integration, and dissemination of the USPSTF recommendations in health plans. Our suggestions reflect the perspectives, ideas, and experiences of health plan respondents at the four participating plans:

➤ ***Enhance the visibility of USPSTF and its recommendations.***

In order to improve the adoption and integration of the USPSTF recommendations, AHRQ should take strides towards improving the visibility of both the USPSTF and its recommendations for clinical preventive services. We propose this recommendation for a variety of reasons. In response to the question, “How can AHRQ improve its dissemination of the Task Force recommendations to improve adoption rates at the systems-level,” a number of respondents indicated that the USPSTF needs to improve its public visibility. Many respondents have heard of the USPSTF, but are not familiar with the recommendations. Others were not familiar with the USPSTF or its recommendations for clinical preventive services. A Director of Quality Improvement reinforced the importance of visibility: “The one thing I would say is I don’t know anybody who’s involved with [the USPSTF recommendations]. They’re not a visible organization, and I think they ought to create dialogue and become more visible.”

Improving the visibility of the USPSTF is particularly important for drawing the attention of physicians. We found that the health plans, with the exception of the open-panel plan, do not provide their physicians with the USPSTF recommendations. However, even in the case of the open-panel plan, it is unclear whether providers are consulting the USPSTF recommendations on their own. According to a Director of Health IT for the open-panel plan: “The health policy group does make reference to the Task Force for policy issues for preventive services. All the information is online, but it’s passive. It isn’t sent out to providers – it’s there for their reference.” One Clinical Advisor indicated that providers do not typically consult the USPSTF recommendations unless a recommendation becomes highly controversial. Several respondents also discussed the importance of “selling the USPSTF recommendations to clinicians.”

Given these findings, we recommend that AHRQ take steps towards increasing the visibility of the USPSTF and its recommendations. One way to improve visibility is for AHRQ or the USPSTF members to participate on behalf of the USPSTF in professional conferences for providers. Clinical Advisors suggested that the USPSTF should consider participating in conferences that address clinical preventive services in order to improve the visibility of the recommendations amongst the larger audience of primary care physicians. USPSTF representation at conferences should not necessarily be limited to primary care focused conferences, as specialty care clinicians would also benefit from information about the USPSTF. Although the USPSTF currently participates in a limited number of professional conferences, such as the American College of Preventive Medicine and the American Academy of Family Physicians, the Task Force should consider participating in a larger, more diverse set of professional conferences to increase its visibility amongst providers. Some prime examples include the American College of Preventive Medicine national meeting and the Association of Teachers of Preventive Medicine annual meeting.

AHRQ should also consider presenting about the role of the USPSTF recommendations in promoting preventive health services at professional health research and policy conferences that yield a broader health care audience. Ideal venues would include the National Health Policy Conference, sponsored by AcademyHealth and Health Affairs, and the American Public Health Association’s Annual Conference.

Another way to improve the USPSTF’s visibility and also improve the dissemination of the recommendations was suggested by a Director of Quality Improvement at the hybrid plan. Namely, AHRQ could sponsor a membership organization for USPSTF users. Such a group would consist of health plan professionals across the country (e.g. Directors of Quality Improvement or other clinical preventive service staff) that utilize the USPSTF recommendations. A membership organization would foster a unique and productive opportunity for dialogue about the USPSTF recommendations. In addition to the membership organization, AHRQ could sponsor a USPSTF users conference to foster dialogue on important and timely issues related to clinical preventive services recommendations.

➤ ***Create new USPSTF products and publicize existing ones.***

Given respondents’ desire to learn more about the methodology that the USPSTF uses to select and prioritize its recommendations, we propose that AHRQ develop a small brochure on methodology for distribution across health plans. As suggested by a Director of Quality Improvement, we recommend that AHRQ develop a pocket-sized brochure that presents a matrix of the “A” and “B” recommendations for certain subgroups of the populations, also taking into account other patient characteristics (e.g., recommendations for a male smoker within a certain age range).

Second, given that respondents were unfamiliar with the *Put Prevention into Practice* materials, such as the *Electronic Interactive Preventive Services Selector*, we propose that AHRQ further disseminate and publicize the availability of these tools and the opportunity to join the USPSTF listserv online.

➤ ***Work more closely with health plan leadership.***

Respondents recommended that AHRQ work more closely with their health plan leadership, such as the Medical Directors and Directors of Quality Improvement at the plans. Specifically, respondents suggested that AHRQ and the USPSTF develop collaborative relationships with their health plans, similar to the existing partnerships that plans form with other organizations that issue recommendations. For example, Quality Improvement Staff indicated that the hybrid plan partners with a state chapter of the American Academy of Pediatrics (AAP), consulting AAP when developing new prevention materials and education programs on practice change for immunizations. The hybrid plan also works closely with the American Cancer Society, partnering with the organization on an initiative to improve screening rates for colorectal cancer. Respondents suggested that it would be beneficial for AHRQ and the USPSTF to reach out to health plans about preventive health in similar ways. Clinical Advisors have stressed that clinical preventive services recommendations are integrated at the health plan leadership level. As a result, close collaboration with health plan leadership would improve the potential for the USPSTF recommendations to be consulted and potentially adopted into the health plan.

➤ ***Educate consumers about the USPSTF recommendations and prevention.***

Several respondents indicated the importance of educating consumers about the USPSTF recommendations. Our interviews demonstrated that health plan leadership is not aware of different strategies that AHRQ uses to disseminate its USPSTF tools and products to consumers. One Quality Improvement Director suggested that the USPSTF recommendations should be “marketed” to consumers – perhaps even through the television media. Clinical Advisors also indicated that a key goal should be to reach consumers about the USPSTF recommendations, similar to pharmaceutical campaigns. Another respondent suggested that USPSTF include its recommendations on popular web news services such as WebMD, which provides timely health information and tools for health management.

Key Issues for Future Study

While the current study has elucidated important findings and lessons learned, we identify four key areas that merit further investigation to assist AHRQ in moving forward.

- *The integration of the USPSTF recommendations in hybrid plans.* The issue of integrating USPSTF recommendations into hybrid plans is particularly interesting given their unique characteristics and prevalence in today’s health care market. Few plans today can be characterized as purely open-model or closed-model, making the issues and concerns faced by these plans an important area of study. The mixed-model nature of hybrid plans makes them an ideal study environment to learn more about the integration of the USPSTF recommendations. Future studies should explore whether the mixed-model structure underlying hybrid health plans offers unique incentives for providers to integrate and deliver the USPSTF recommendations for clinical preventive services.
- *Use of hybrid plans as ideal study sites to investigate the impact of plan structure on the USPSTF recommendations.* Hybrid plans function as a natural learning laboratory through which to study open and closed-model plan characteristics. Their mixed-model nature presents a

unique opportunity to compare key health plan variables of open and closed-panel health plans while also controlling for systems-level differences. Therefore, hybrid plans are the ideal study sites to investigate the impact of plan structure on the USPSTF recommendations. Future research in hybrid plans has the potential to identify new directions and interventions to increase the integration and delivery of USPSTF recommendations across all types of health plans. Studies could compare the implementation and integration of the USPSTF recommendations in hybrid plans between plan-affiliated and contracted providers. Longitudinal studies that explore these research areas and others have the potential to unlock the impact of plan structure on the USPSTF recommendations. More broadly, as health plan structures continue to evolve, research focused on hybrid plans offers an opportunity to explore preventive service delivery within both traditional and emerging health plan structures.

- *Health plan use of the USPSTF recommendations during times of change and controversy.* Our findings suggest that health plans strategically consult the USPSTF recommendations during times of change (e.g. clinical preventive services recommendations are evolving for new diseases and conditions such as obesity) and controversy (e.g. new science merits the USPSTF and other organizations to abruptly revisit current recommendations for clinical preventive services). Given the small sample of this study, further research should explore whether health plans do, in fact, consult the USPSTF recommendations in a strategic manner. Furthermore, if this is the case on a larger scale, it would be beneficial for AHRQ to increase its dissemination and visibility of the USPSTF recommendations during climates of change and controversy to improve their potential for adoption and delivery in health plans.
- *Competing recommendations for clinical preventive services.* The USPSTF recommendations represent an important resource for health plans that develop their own clinical preventive services recommendations. However, the USPSTF recommendations are clearly only one of many resources consulted by the plans. The question is why? Our study only begins to explore why some health plans are partial to the recommendations of other professional organizations and societies for certain clinical conditions. Additional work may be required to understand, for example, why the hybrid plan utilizes recommendations from the American Cancer Society rather than the USPSTF for its clinical preventive services related to cancer. Or, alternatively, why other health plans reference a handful of specialty societies or professional organizations for certain clinical preventive services recommendations rather than simply utilizing the USPSTF recommendations. Is it because health plans believe that recommendations from specialty organizations and professional societies are easier to “sell” to providers? Further research will be necessary to understand why competing recommendations from specialty organizations are referenced for certain types of clinical services, and whether there are trends across different types of health plans.
- *Why are certain “A” and “B” USPSTF recommendations consulted more than others?* Our research suggests that while some of the “A” and “B” recommendations are referenced by health plans, there are a variety of others that are not (e.g., screenings for visual impairment in children younger than age 5 years, lipid disorders, obesity in adults, Rh (D) incompatibility, gonorrhea, hepatitis B virus infection, and HIV). Why are these “A” and “B” USPSTF recommendations rarely consulted? We propose the development of a detailed matrix of the four health plans’ clinical preventive services recommendations. By obtaining complete listings of all of the clinical preventive services recommendations for the open-panel plan, closed-panel plan, hybrid plan, and governmental plan, and identifying the roots of the

recommendations (e.g., the USPSTF, American Cancer Society, etc.), we will be able to uncover important trends across plans. Additionally, conducting a small number of follow-up interviews with the plans to discuss the trends will help AHRQ to better understand why the “A” and “B” USPSTF recommendations are being implemented for certain clinical conditions and not others. This research will assist AHRQ in improving the dissemination of USPSTF tools, information, and products to health plans.

- *The functions of a USPSTF membership organization for health plans.* This study confirmed the importance of increasing the visibility of the USPSTF and its recommendations. One respondent suggested that AHRQ could sponsor a USPSTF “user group,” consisting of health plan professionals across the country (e.g., Directors of Quality Improvement or other clinical preventive service staff) that utilize the USPSTF recommendations. While our study identifies the importance of establishing a membership organization that would foster a regular dialogue about the USPSTF recommendations amongst health plan staff, it is crucial to consider a few questions: (1) how would the user group be structured?; (2) who would participate from health plans?; (3) would AHRQ be the appropriate administrator of the user group, or would such an endeavor be better operated by an outside organization?; (4) what types of issues would the group discuss?; and (5) will a user group facilitate improvements in the dissemination and delivery of the USPSTF recommendations in health plans? Further study would explore these questions in order to better guide the development of a membership organization for the USPSTF recommendations.

Endnotes

¹ Belcher DW, Berg AO, Inui TS. Practical approaches to providing better preventive care: are physicians a problem or a solution? In: Batista RN, Lawrence RS, eds. Implementing Preventive Services. *American Journal of Preventive Medicine*. 1988; 4 (suppl): 27-48.

² Nutting PA. Health promotion in primary medical care: problems and potential. *Preventive Medicine*. 1986; 15: 537-48.

³ McPhee SJ, Bird JA. Implementation of cancer prevention guidelines in clinical practice. *Journal of Internal Medicine*. 1990; 5(suppl): S116-22.

⁴ Osborn EH, Bird JA, McPhee SJ, et al. Cancer screening by primary care physicians: can we explain the differences? *Journal of Family Practice*. 1991; 32: 465-71.

⁵ Henry RC, Ogle KS, Snellman LA. Preventive medicine: physician practices, beliefs, and perceived barriers for implementation. *Family Medicine*. 1987; 19: 110-3.

⁶ Rosen MA, Demak MM. Prevention and health promotion in primary care: baseline results on physicians from the INSURE project on lifecycle preventive health services. *Preventive Medicine*. 1984; 13: 535-48.

⁷ Stange KC, Fedirko T, Zyzanski SJ, Jaen CR. How do family physicians prioritize delivery of multiple preventive services? *Journal of Family Practice*. 1994; 38: 231-7.

⁸ Kamerow DB. Prioritizing Prevention. *Journal of Family Practice*. 1994; 38: 229-30.

⁹ Mehrotra A, Epstein AM, and Rosenthal MB. Do integrated medical groups provide higher-quality medical care than individual practice associations? *Annals of Internal Medicine*. 2006; 145: 826-833.

¹⁰ Belcher DW, Berg AO, Inui TS. Practical approaches to providing better preventive care: are physicians a problem or a solution? In: Batista RN, Lawrence RS, eds. Implementing Preventive Services. *American Journal of Preventive Medicine*. 1988; 4(suppl): 27-48.

¹¹ Nutting PA. Health promotion in primary medical care: problems and potential. *Preventive Medicine*. 1986; 15: 537-48.

¹² McPhee SJ, Bird JA. Implementation of cancer prevention guidelines in clinical practice. *Journal of Internal Medicine*. 1990; 5(suppl): S116-22.

¹³ Osborn EH, Bird JA, McPhee SJ, et al. Cancer screening by primary care physicians: can we explain the differences? *Journal of Family Practice*. 1991; 32: 465-71.

-
- ¹⁴ Henry RC, Ogle KS, Snellman LA. Preventive medicine: physician practices, beliefs, and perceived barriers for implementation. *Family Medicine*. 1987; 19: 110-3.
- ¹⁵ Rosen MA, Demak MM. Prevention and health promotion in primary care: baseline results on physicians from the INSURE project on lifecycle preventive health services. *Preventive Medicine*. 1984; 13: 535-48.
- ¹⁶ Stange KC, Fedirko T, Zyzanski SJ, Jaen CR. How do family physicians prioritize delivery of multiple preventive services? *Journal of Family Practice*. 1994; 38: 231.
- ¹⁷ Kamerow DB. Prioritizing Prevention. *Journal of Family Practice*. 1994; 38: 229.
- ¹⁸ Medder JD, Kahn NB, Susman JL. Risk factors and recommendations for 230 Adult primary care patients, based on U.S. Preventive Services Task Force Guidelines. *American Journal of Preventive Medicine*. 1992; 8: 150-53.
- ¹⁹ Practice volume was characterized by the number of patients seen per hour: low volume at 2.1 patients per hour, medium volume at 3.3 patients per hour, and high volume at 5.1 patients per hour.
- ²⁰ Zyzanski SJ, Stange KC, Langa D, Flocke SA. Trade-offs in high-volume primary care practices. *Journal of Family Practice*. 1998; 46: 397.
- ²¹ Ibid.
- ²² Stange KC, Fedirko T, Zyzanski SJ, Jaen CR. How do family physicians prioritize delivery of multiple preventive services? *Journal of Family Practice*. 1994; 38: 231.
- ²³ U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force, 2nd ed. Washington, DC: Office of Disease Prevention and Health Promotion, U.S. Government Printing Office, 1996.
- ²⁴ Stange KC, Flocke SA, Goodwin MA. Opportunistic preventive services delivery: are time limitations and patient satisfaction barriers? *Journal of Family Practice*. 1998; 46: 419.
- ²⁵ Figures do not include height, weight, or blood pressure readings.
- ²⁶ Ibid.
- ²⁷ On average family practice physicians spend 17.1 minutes per patient according to the 2001 National Ambulatory Medical Survey.
- ²⁸ Cooper GS, Goodwin MA, Stange KC. The delivery of preventive services for patient symptoms. *American Journal of Preventive Medicine*. 2001; 21(3): 177-181.
- ²⁹ Carney CP, Allen J, Doebbeling BN. Receipt of clinical preventive medical services among psychiatric patients. *Psychiatric Services*. 2002; 53(8): 1028-1030.
- ³⁰ Yarnall KSH, Pollak, KI, Krause KM, et al. Primary care: is there enough time for prevention? *American Journal of Public Health*. 2003; 93: 635-641.
- ³¹ Stange KC, Fedirko T, Zyzanski SJ, Jaen CR. How do family physicians prioritize delivery of multiple preventive services? *Journal of Family Practice*. 1994; 38: 231.
- ³² Maciosek MV, Coffield AB, McGinnis JM, et al. Methods for priority setting among clinical preventive services. *American Journal of Preventive Medicine*. 2001; 21: 10-19. See also Coffield AB, Maciosek MV, McGinnis JM, et al. Priorities among recommended clinical preventive services. *American Journal of Preventive Medicine*. 2001; 21: 1-9.
- ³³ Maciosek MV, Coffield AB, Edwards NM, Flottemesch TJ, Goodman MJ, Solberg, LI. Priorities among effective clinical preventive services: Results of a systematic review and analysis. *American Journal of Preventive Medicine*. 2006; 31: 52-61.
- ³⁴ Saha S, Hoerger TJ, Pignone MP, Teutsch SM, Helfand M, Mandelblatt JS. [USPSTF Cost Work Group] The art and science of incorporating cost-effectiveness into evidence-based recommendations for clinical preventive services. *American Journal of Preventive Medicine*. 2001; 20(suppl 3): 36-43.
- ³⁵ James PA, Cowan TM, Graham RP, Majeroni GB. Family physicians' attitudes about and use of clinical practice guidelines. *Journal of Family Practice*. 1997; 45: 341.
- ³⁶ Solberg LI, Brekke ML, Kottke TE. How important are clinician and nurse attitudes to the delivery of clinical preventive services? *Journal of Family Practice*. 1997; 44: 451.
- ³⁷ Atkins D, DiGiuseppe CG. Broadening the evidence base for evidence-based guidelines. *American Journal of Preventive Medicine*. 1998; 14: 335-44.
- ³⁸ Solberg LI, Kottke TE, Brekke ML, Conn SA, Magnan S, Amundson G. The case of the missing clinical preventive services systems. *Effective Clinical Practice*. 1998; 1: 33-38.
- ³⁹ Frame PS, Zimmer JG, Werth PL, Hall WJ, et al. Computer-based vs. manual health maintenance tracking. *Archives of Family Medicine*. 1994; 3: 581-8.
- ⁴⁰ Cargill VA, Conti M, Neuhauser D, McClish D. Improving the effectiveness of screening for colorectal cancer by involving nurse clinicians. *Medical Care*. 1991; 29: 1-5.
- ⁴¹ Duncan C, Cummings SR, Stein MJ. Staff involvement and special follow-up time increase physicians' counseling about smoking cessation: a controlled trial. *American Journal of Public Health*. 1991; 81: 899-901.
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- ⁴² Health maintenance protocol in a family practice setting (tips from other journals). *American Family Physician*. 1991; 43: 1002.
- ⁴³ Hahn DL and Berger MG. Implementation of a systematic health maintenance protocol in a private practice. *Journal of Family Practice*. 1990; 31: 492-504.
- ⁴⁴ Stange KC, Fedirko T, Zyzanski SJ, Jaen CR. How do family physicians prioritize delivery of multiple preventive services? *Journal of Family Practice*. 1994; 38: 231.
- ⁴⁵ Stange KC, Flocke SA, Goodwin MA. Opportunistic preventive services delivery: are time limitations and patient satisfaction barriers? *Journal of Family Practice*. 1998; 46: 419.
- ⁴⁶ Merenstein D, Rabinowitz H, Louis DZ. Health care plan decisions regarding preventive services. *Archives of Family Medicine*. 1999; 8: 354-356.
- ⁴⁷ Ibid.
- ⁴⁸ Mehrotra A, Epstein AM, Rosenthal MB. Do integrated medical groups provide higher-quality medical care than individual practice associations? *Annals of Internal Medicine*. 2006; 145: 826-833.
- ⁴⁹ Shojania KG, Grimshaw JM. Evidence-based quality improvement: the state of the science. *Health Affairs*. 2005; 24: 138-50.
- ⁵⁰ Keating NL, Landrum MB, Landon BE, Ayanian JZ, Borbas C, Wolf R, et al. The influence of physicians' practice management strategies and financial arrangements on quality of care among patients with diabetes. *Medical Care*. 2004; 42: 829-839.
- ⁵¹ Solberg LI, Kottke TE, Brekke ML, Magnan S, Davidson G, Calomeni CA, Conn SA, Amundson GM, Nelson AF. Failure of a continuous quality improvement intervention to increase the delivery of preventive services: a randomized trial. *Effective Clinical Practice*. 2000; 3: 105-115.
- ⁵² Shaw JS, Wasserman RC, Barry S, Delaney T, Duncan P, Davis W, Berry P. Statewide quality improvement outreach improves preventive services for young children. *Pediatrics*. 2006; 118: 1039-1047.
- ⁵³ Shafer MB, Tebb KP, Pantell RH, Wibbelsman CJ, Neuhaus JM, Tipton AC, Kunin SB, Ko TH, Schweppe DM, Bergman DA. Effect of a clinical practice improvement intervention on chlamydia screening among adolescent girls. *Journal of the American Medical Association*. 2002; 288: 2846-2852.
- ⁵⁴ Kim CS, Kristopaitis RJ, Stone E, Pelter M, Sandhu M, Weingarten, SR. Physician education and report cards: do they make the grade? Results from a randomized controlled trial. *American Journal of Medicine*. 1999; 107: 556-560.
- ⁵⁵ Each plan used a slightly different title for this position.
- ⁵⁶ The *ePSS* was designed to help clinicians identify and offer the USPSTF preventive services that are appropriate for their patients. The *ePSS* is available as both a web-based tool and a downloadable PDA application that can be used to search the USPSTF recommendations by specific patient characteristics, such as age, sex, and selected behavioral risk factors.
- ⁵⁷ "Clinical thought leaders" were described as "experts" in particular clinical areas. The closed-panel plan has three for internal medicine, three for pediatrics, one for oncology, and one for most other medical specialties. These clinical experts play a role in both reviewing and adopting the clinical preventive guidelines at the regional level.
- ⁵⁸ The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate specific antigen (PSA) testing or digital rectal examination (DRE).
- ⁵⁹ Due to the range of answers we received to the question, "Are all or some of the services that are recommended by the Task Force, the "A" and "B" recommendations, being delivered throughout your healthcare system," we were not able to present the findings in a more quantitatively rigorous manner.
- ⁶⁰ (Managed Healthcare: An Introduction, Academy for Healthcare Management, 2001, 3d Ed.).
- ⁶¹ Sittig DF, Krall MA, Dykstra RH, Russell A, Chin HL. A survey of factors affecting clinician acceptance of clinical decision support. *BMC Medical Informatics and Decision-making*. 2006; 6: 6.
- ⁶² Chaudhry B, Wang J, Wu S, Maglione M, Mojica W, Roth E, Morton SC, and Shekelle PG. Systematic Review: Impact of Health Information Technology on Quality, Efficiency and Costs of Medical Care. *Annals of Internal Medicine*. 2006; 144: 742-752.
- ⁶³ Electronic Medical/ Health Records. AHRQ National Resource Center for Health Information Technology. U.S. Department of Health and Human Services. Available at <http://healthit.ahrq.gov>. Accessed December 2006.
- ⁶⁴ Ibid.
- ⁶⁵ Schneider E, Richl V, Courte-Wiencke S, Eddy D, Sennett C. Enhancing Performance Measurement: NCQA's Roadmap for a Health Information Framework. *Journal of the American Medical Association*. 1999; 282(12):1184-90.
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