



Environmental Scan and Literature Review: Factors that Influence Preventive Service Utilization among Adults Covered by Medicaid

Improving Quality of Care in Medicaid and CHIP through Increased
Access to Preventive Services

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Executive summary

Preventable disease accounts for 75 percent of health care spending in the United States, and is linked to 7 out of 10 premature deaths. Despite the benefits of preventive care, the Centers for Disease Control and Prevention estimate that Americans access preventive services at only about half the recommended rate (Centers for Disease Control and Prevention 2013).

State Medicaid coverage of preventive services is widely variable (Kaiser Commission on Medicaid and the Uninsured 2012). The Affordable Care Act (ACA) presents several opportunities to increase access to preventive services, both through the expansion of Medicaid and through several provisions in the law that provide incentives to states to increase access to Medicaid- and CHIP-covered preventive services. Most notably, Section 4106 of the ACA gives states the option to receive a 1 percentage-point increased federal medical assistance percentage (FMAP) to cover USPSTF- and ACIP-recommended services with no cost-sharing requirements for existing and newly eligible Medicaid beneficiaries. These incentives to increase coverage provide opportunity to promote preventive services among Medicaid and CHIP beneficiaries, many of whom will be able to access these services without cost-sharing.

Findings

This environmental scan examines the literature from the last five years on preventive care services for adults enrolled in Medicaid and CHIP in order to identify potential opportunities and strategies to promote preventive service utilization. It explores the influence of a variety of factors that affect the use of preventive services, including policy decisions at the federal and state levels, and barriers and facilitators at the delivery system, provider and patient levels, and how these factors potentially influence utilization. Evidence around health and costs outcomes associated with preventive services use is also summarized.

Opportunities to increase utilization

Despite evidence demonstrating the benefits of screening and preventive services, use of many preventive services remains suboptimal. The main sections of this report examine the potential factors that increase or limit the use of preventive services at the state level, the delivery system and provider levels, and the patient level. Examples of existing activities found in the literature that target each of these levels are also described. In most cases, these are examples and not generalizations as many of the studies were based off a small number of organizations and were descriptive with no comparison group. However, these examples may highlight potential strategies and approaches to improving access to and the utilization of preventive services in the current context of increased coverage for preventive services through the ACA.

1. State/MCO activities

States play an important role in promoting preventive service utilization through Medicaid coverage, provider policies, and imposing incentives for quality improvement. The literature points to a number of barriers at the state or health plan level, however, that limit access to preventive services. For example, despite state mandates requiring coverage of preventive services, health plan interpretation of scope and frequency, as well as cost-sharing requirements, may limit use of these services (Rodriguez, Osborne, and Jacobellis 2011; Pollitz et al. 2013). The literature examining the effects of managed care generally found that the transition from fee-for-service to managed care increased screening rates, particularly for prenatal care (Johnson et al. 2012; Marin et al. 2009).

2. Delivery systems/providers

The literature points to several provider level factors that influence the likelihood that patients will receive preventive services. First, several studies demonstrated that gaps in provider knowledge serve as a barrier to preventive service utilization. Low knowledge among providers about insurance coverage for screening was associated with lower rates of colorectal and chlamydia screening (Nichols et al. 2009; McGrath et al. 2011). Providers also make decisions to screen based on patient risk status, race and ethnicity, and insurance coverage (McGrath et al. 2011; Rauscher et al. 2012; Schuur et al. 2009; Mohammad and Khan 2010). Provider practice characteristics also play a role in preventive service utilization, with practices with a high volume of at-risk patients being more likely to screen for certain conditions (Oliveria et al. 2011; Weiss et al. 2013; Herrin et al. 2013). Findings in the literature suggest that targeted provider education may improve screening rates. Although limited in number, the literature did include some articles on the effective use of quality improvement strategies, such as practice facilitators, to increase preventive screening rates (Knox and Brach 2013; Nagykaladi, Mold, and Aspy 2005).

3. Patients

The literature in this review clearly demonstrates the link between preventive service utilization and insurance coverage, age, health status, education, access to transportation, having a usual source of care, marital status, income, race and ethnicity, and education. Several studies confirmed the link between insurance coverage and preventive services utilization (Allen et al. 2009; Carney et al. 2012; Gold et al. 2009, 2012; Fuentes-Afflick and Hessel 2009; Takayama, Wetmore, and Mokdad 2012). A substantial body of work addressed the association between Medicaid coverage and preventive service use (Tu et al. 2010; Coronado, Thompson, and Chen 2009; Finkelstein et al. 2012). Most studies found that access to Medicaid coverage increased the likelihood that patients would receive screening services, although public coverage was also associated with receiving care in a public hospital, or an institution with fewer resources, or by a nonspecialist. The literature also confirmed that having a usual source of care is associated with increased preventive service use (Allen et al. 2009; Cardarelli, Kurian, and Pandya 2010). There was conflicting evidence regarding race and ethnicity and use of preventive services. While in some studies white women were more likely to receive cervical and breast cancer screening services (Nadpara et al. 2012; Bhanegaonkar et al. 2012), other studies in this review found minority women were more likely to receive these screenings in certain communities (Cook et al. 2010; Coronado, Thompson, and Chen 2009). Several studies in the review examined interventions aimed at patients to improve use of screening services, including coverage mandates and education and outreach efforts. By and large, coverage mandates improve use of screening services, although there was some evidence that barriers still remain (Cokkinides et al. 2011; Owusu-Edusei, Gift, and Chesson 2010). There were some examples of education and outreach efforts targeted at patients, including mail and telephonic reminders of screening services, the involvement of practice navigators, and motivational interviewing by health care providers (Parkington et al. 2009; Leone et al. 2013).

Cost and outcomes

While there were some studies from the past five years that looked at cost or health outcomes as a result of the use of specific preventive services among adults, most of the evidence base supporting the use of adult preventive services dates further back. However, the fact that services have been recommended by the USPSTF indicates there is enough evidence to provide high certainty that there is a net benefit to using the service (US Preventive Services Task Force and Agency for Healthcare Research and Quality 2011). Several studies in this five-year look back focused on the optimal frequency for preventive screenings. Findings generally suggest that less frequent and more targeted screening and

interventions are more cost-effective than broad-based efforts (Ramsey et al. 2010; Rieg et al. 2008). For example, targeted screenings for individuals at risk for skin and colorectal cancer were shown to be more cost-effective than intensive screenings of whole patient populations (Wolff, Tai, and Miller 2009). A number of studies focused on diet and exercise, and they demonstrated potential societal cost savings when obesity, hypertension, and diabetes prevention programs are in place (Ormond et al. 2011; Bradley et al. 2013; Whittemore et al. 2013). Substance abuse treatment was also found in several cases to result in positive cost outcomes and cost savings (Jonas et al. 2012; Land, Rigotti, et al. 2010; Richard, West, and Ku 2012). Despite previously published literature, the studies in this review showed mixed results on prenatal care and birth outcomes (Anum, Retchin, and Strauss 2010; Arima et al. 2009).

Conclusion

The ACA provides new opportunities for Medicaid- and CHIP-eligible adults to access preventive services for which they were previously ineligible. Despite the increase in coverage, the literature in this review points to a number of barriers that remain at the state/MCO, provider, and patient levels. These results offer examples and opportunities for activities to increase the use of preventive services, although additional evidence for targeted activities is required.

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I. Introduction and background

Introduction

In 2013, the Centers for Medicare and Medicaid Services (CMS) contracted with the Urban Institute to support, track, and evaluate efforts to increase access to preventive health care services in Medicaid and the Children's Health Insurance Program (CHIP). Among other tasks, this project includes the development and dissemination of resources for states to use to increase public awareness of preventive care, promote the delivery of preventive health services available to Medicaid and CHIP beneficiaries, and improve the quality of care for adults. This is one of two environmental scan reports produced to inform the development of these resources for states; it compiles and assesses the recent literature on preventive health care services for adults in Medicaid. The companion report does the same for children in Medicaid and CHIP.

Background

The problem

Many of the most common health problems in the United States are largely preventable through screening for early detection, treatment, and lifestyle change. For example, chronic conditions such as heart disease, cancer, and diabetes account for 75 percent of health care spending in the United States and 7 of every 10 deaths (Centers for Disease Control and Prevention 2013). Preventive health care services offer potential benefits for individuals by improving health and well-being and increasing productivity, and for society as individuals may avoid disease, disability and premature death (Cassidy 2010). In addition, there are societal benefits to preventive services such as screenings and vaccines that prevent the spread of infectious disease.

Despite these benefits, there are a number of barriers that prevent many adults from getting recommended preventive care. The Centers for Disease Control estimates that Americans access preventive services at about half the recommended rate (Centers for Disease Control and Prevention 2013). These barriers exist at the individual, health system, and policy levels. As the US population has grown and aged, there has been a movement by public health professionals and policymakers to transition our health system, which has traditionally focused on providing acute care, in order to care for the growing number of people with chronic conditions. More recently, it has become a major policy goal to promote the use of preventive services in order to reduce the incidence of chronic conditions.

Medicaid and CHIP eligibility and enrollment

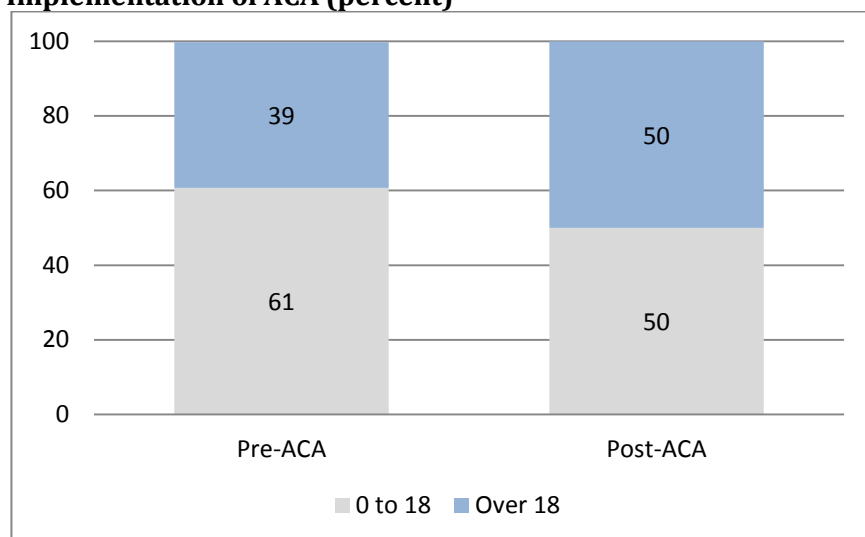
At the same time, as a result of the Affordable Care Act (ACA), the Medicaid program is currently going through what has been described as “a historic time of transformation” (Smith et al. 2013). Prior to the ACA, Medicaid and CHIP eligibility was limited mostly to children, low-income parents, pregnant women, persons with certain disabilities, and low-income seniors. However, the ACA provides the opportunity for states to expand eligibility to all adults under 138 percent of the federal poverty level (FPL) starting January 1, 2014 (ACA § 2001, as modified by § 10201). The law also allowed states to expand coverage to low-income childless adults prior to 2014. This option was taken up by several states, including California, Connecticut, Minnesota, and Washington, DC (Sommers, Kenney, and Epstein 2014).¹ The

¹ As is common in discussions about Medicaid, Washington, DC, is referred to as a state in this report.

Urban Institute estimated that full Medicaid expansion by all states under the ACA would result in a growth of over 18 million new Medicaid and CHIP beneficiaries, bringing program enrollment to over 66 million people, as well as producing significant changes in the make-up of the Medicaid/CHIP population (see figure 1). Where adults previously made up less than 40 percent of the Medicaid/CHIP population, it is projected that after full Medicaid expansion adults will make up 50 percent of this population.

In June 2012, however, the Supreme Court ruled that the expansion of Medicaid under the ACA was optional for states (Henry J. Kaiser Family Foundation 2012). As of January 2014, at least 19 states have elected not to expand their Medicaid programs. In the absence of Medicaid expansion, higher uninsured rates will remain in these states. While the magnitude of the expansion's impact on the Medicaid population was likely overestimated prior to this Supreme Court ruling, the expansion in 32 states (including Washington, DC) will likely result in changes to the composition of the Medicaid/CHIP population.

Figure 1: Estimated Age Make-Up of Medicaid/CHIP Population, Pre- and Post-Full Implementation of ACA (percent)



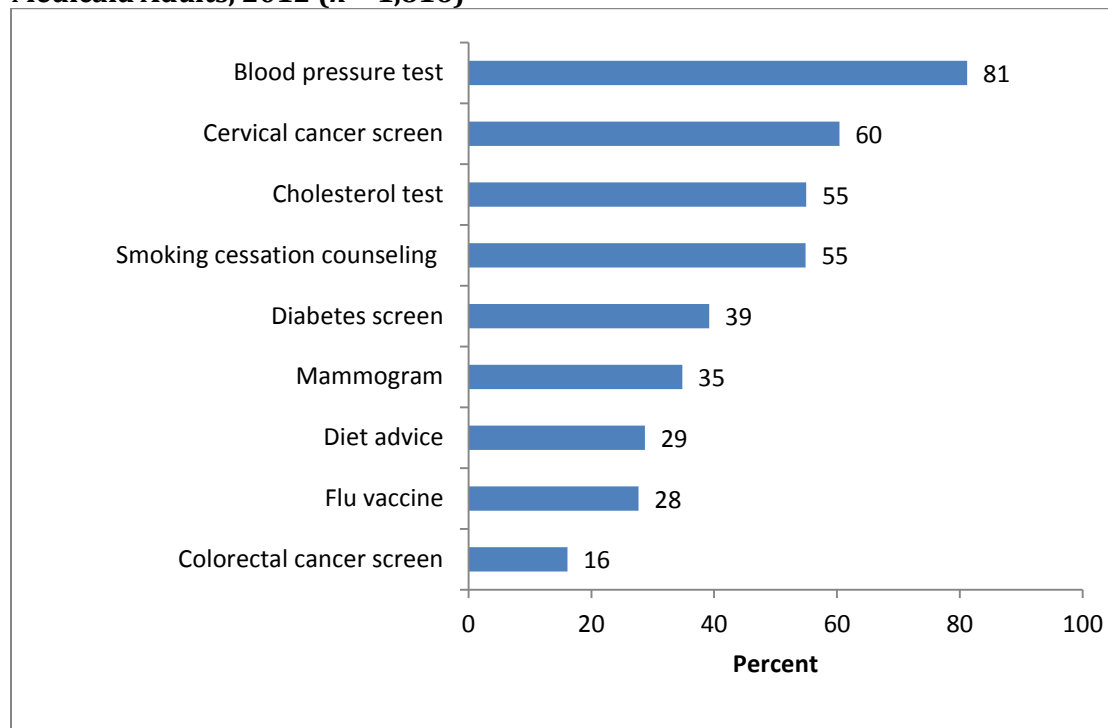
Source: Kenney et al. (2013).

While the Medicaid program has traditionally focused on maternal and child health, as well as providing care for disabled and complex patients, the influx of newly eligible adults (both childless adults and parents in states with low eligibility thresholds pre-ACA) will likely result in an increased need for adult preventive services. Although low-income adults ages 18–64 who may be newly eligible for Medicaid are less likely to have chronic conditions such as hypertension and diabetes than adults already enrolled in Medicaid, they may be more likely to have undiagnosed or uncontrolled conditions (Decker et al. 2013; Holahan, Kenney, and Pelletier 2010). Therefore, there may be significant need for preventive screenings and treatment, particularly among those who were previously uninsured (Finkelstein et al. 2012). The new population of childless young adults covered by Medicaid will likely have significant reproductive health and behavioral health needs as well (Dubay, Kenney, and Zarabozo 2013).

Even prior to Medicaid expansion, Medicaid and CHIP provided health care coverage for a larger portion of US nonelderly citizens than any single private insurer (Kaiser Commission on Medicaid and the Uninsured 2013). As such, Medicaid and CHIP have the potential to promote access to and use of preventive services for a substantial portion of US adults. Unfortunately, little information is currently

available on access to and the quality of preventive services for Medicaid adults nationally. A recent estimate of preventive service utilization by Medicaid adults suggests there is room for improvement (see figure 2).

Figure 2: Estimated Receipt of Certain Preventive Services in the Past 12 Months among Medicaid Adults, 2012 (n = 1,816)



Source: Kenney et al. (2014).

The ACA, Medicaid, and preventive services

Prior to the enactment of the ACA, coverage of preventive services for adults varied by state. A recent Kaiser Family Foundation survey examined states' Medicaid fee-for-service coverage of the 42 adult preventive services and immunizations recommended with an A or B rating by the US Preventive Services Task Force (USPSTF) and ACIP (Kaiser Commission on Medicaid and the Uninsured 2012; US Preventive Services Task Force 2014; Centers for Disease Control and Prevention 2014). As of October 2010, 44 of the 48 states that responded to the survey covered at least 30 of these services, 25 states covered 40 or more, and only 14 states covered all of them. In addition to having the flexibility to offer preventive services coverage at all to beneficiaries, states may impose cost-sharing on preventive services with the exception of family planning and pregnancy-related services. There is also some flexibility in the extent of coverage provided and the specific details of the services (e.g., the number of tobacco-cessation quit attempts and counseling sessions). The Kaiser Family Foundation survey found that only six states covered all services without cost-sharing.

In addition to coverage expansion, the ACA provides a number of opportunities to increase the use of preventive services among adults. There are a number of provisions in the ACA that provide opportunities to expand access to Medicaid and CHIP preventive health care services through strategies targeted at both patients and the delivery system (see table 1). Of particular relevance for Medicaid is the opportunity for states to receive an additional 1 percentage-point increase in the federal medical assistance percentage (FMAP), effective January 1, 2013, should they choose to cover a full list of

USPSTF- and ACIP-recommended services with no cost-sharing for their existing Medicaid population (ACA § 4106). The 1 percentage-point increase to the FMAP under section 4106 only applies to certain matching rates specified in section 1905(b) and section 1905(y) of the Social Security Act (Mann 2013). The ACA also requires that those who become eligible under Medicaid expansion receive coverage for preventive services with no cost-sharing. It should be noted that there may still be state variation in coverage for preventive services as states make various combinations of decisions about whether they will expand Medicaid and/or take up 4106. There may also be differences between services covered between the existing adult Medicaid beneficiaries and those who gain coverage through the expansion (Wilensky and Gray 2013).

Also of importance to Medicaid-covered adults is the requirement in the ACA that the Department of Health and Human Services identify and publish a core set of health care quality measures for Medicaid-eligible adults, as was already the case for Medicaid- and CHIP-eligible children. A number of measures initially identified for this core set are related to preventive services, thus providing the opportunity to focus on quality of care and preventive services for Medicaid adults. These measures also will make more information available on the use of preventive services by Medicaid adults.

Table 1: ACA Provisions Emphasizing Prevention in Medicaid and CHIP

ACA Provision	Target Population	Preventive Service	Strategy
Preventive Services Benefits			
Section 4106: Beginning January 2013, gives states the option to receive a 1 percentage-point increased FMAP to cover USPSTF and ACIP-recommended services (A or B grade) without beneficiary cost-sharing.	Primarily traditionally eligible adults	Range of preventive services	Coverage
Section 2001(a)(2): Beginning January 2014, requires states to provide “alternate benefit plans” (ABPs or benchmark plans) that cover the same or a broader set of essential health benefits as do private plans in that state's exchange. As with exchange plans, this includes coverage of ACA Section 2713 preventive services without beneficiary cost-sharing.	Primarily expansion-population adults ; also others eligible for alternate coverage ²	Range of preventive services	Coverage
Section 4107: Beginning October 2010, provides coverage of tobacco-cessation services without cost-sharing for pregnant women; states can also claim expenditures for quit-lines (for all adults) as an administrative expense at the 50 percent federal Medicaid matching rate.	Pregnant women	Tobacco cessation	Coverage
Section 2303: Permits states additional flexibility to extend family planning services to men and non-pregnant women via state plan amendment, which eliminates the need to apply for or renew a waiver.	Non-pregnant adults	Family planning	Coverage
Consumer Outreach			
Section 4004(i): Requires states to conduct outreach efforts to inform Medicaid-covered individuals about	Adults and children ³	Obesity prevention	Consumer outreach

² For more information on Medicaid alternate benefit plans, see <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Alternative-Benefit-Plans.html>.

³ CMS guidance on Section 4004(i) is available at <http://www.medicaid.gov/AffordableCareAct/Provisions/Downloads/4004i-Qs-and-As.pdf>.

ACA Provision	Target Population	Preventive Service	Strategy
the availability and importance of preventive and obesity-related services.			
Section 4108: Establishes a grant program for states to test and evaluate the use of incentives to help Medicaid and CHIP beneficiaries reduce blood pressure, improve cholesterol, lose weight, control diabetes, and stop smoking.	Primarily adults	Healthy living	Consumer incentives
System Support			
Section 2701: Requires the Secretary of the Department of Health and Human Services to identify and publish a core set of health care quality measures for Medicaid-eligible adults.	Adults	Range of preventive services	Quality measurement
Sections 5601, 4101, 4002, 4201, 5313: ⁴ Provide funding for community clinics, school-based health centers, and local health departments, which can affect utilization of preventive services by making it easier for individuals to access them—that is, by reducing the “time price” of services.	General	Range of preventive services	Infrastructure building
Section 4001: Requires creation of a National Prevention Council, which in turn will create and implement a National Prevention Strategy.	General	Range of preventive services	Research and planning

In addition to these ACA provisions, states’ preexisting ability to submit section 1115 waivers to modify their Medicaid programs offer additional prevention-related opportunities through Medicaid. Under section 1115 waiver authority, states can apply for program flexibility to test new or existing approaches to financing and delivering Medicaid and CHIP; some 1115 demonstrations focus at least in part on preventive health (Medicaid.gov).

Goal of report

This report aims to compile and assess available information on preventive health care services from the past five years for adult beneficiaries in Medicaid and CHIP in order to identify potential opportunities and strategies to promote use of preventive services among this population. The next section of this report presents the framework and methods used in this report and an overall summary of the articles identified for inclusion (Section II). The main section of this report (Section III) identifies opportunities to increase utilization of preventive services by summarizing the range of factors influencing preventive services utilization at the state and MCO, provider, and patient levels. This section also describes examples of activities aimed at increasing access to and use of preventive services among adults. Section IV summarizes the evidence from the past five years on health outcomes and costs. Finally, the report concludes with recommendations for resources that may be developed to support state Medicaid and CHIP programs in the spread of preventive services targeted at both patients and at the health care system.

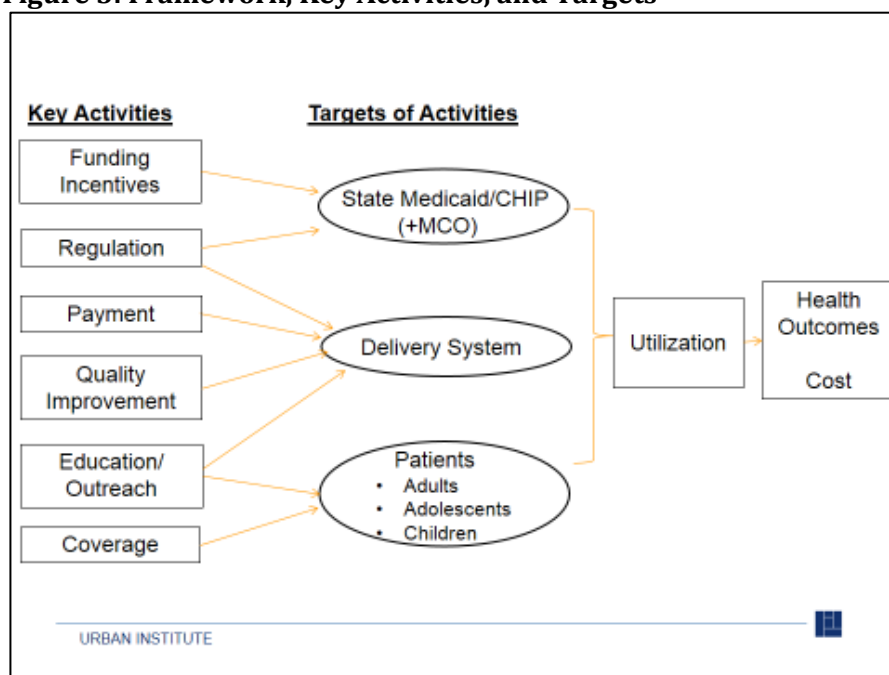
⁴ **Section 5601:** Spending for Federally Qualified Health Centers. **Section 4101:** School-based health centers. **Section 4002:** Prevention and Public Health Fund. **Section 4201:** Community Transformation Grants. **Section 5313:** Grants to promote the community health workforce. Other ACA provisions may be similarly relevant. See <http://housedocs.house.gov/energycommerce/ppacacon.pdf>.

II. Framework and methods

This environmental scan aims to explore the influence of a variety of potential levers targeted at different actors to affect the use of preventive services among Medicaid and CHIP adults. We modified existing conceptual frameworks reflecting the use of multiple levers to guide this environmental scan of published and gray literature (Stone et al. 2002; Anderson 1995). At its core, our framework is meant to suggest that although policies such as the ACA provide tremendous opportunity, a number of actors and steps are involved before these potential benefits reach Medicaid beneficiaries, affect the utilization of preventive services, and ultimately impact health and cost outcomes. For example, the enhanced FMAP offered by CMS under 4106 may provide an incentive to states to increase coverage of preventive services, which could both encourage providers to increase access to these services as well as provide additional financial resources for patients to utilize these services. However, education and outreach may be required to inform providers and patients of these new Medicaid benefits; even beyond providing information, additional resources such as quality improvement activities, new regulations, and additional funding incentives may be required to promote actual utilization of the newly covered preventive services. Although these steps each may present potential barriers, there are also opportunities to target activities aimed at increasing the use of preventive services.

The framework below displays how activities may be targeted at certain actors to increase utilization, and ultimately improve outcomes (figure 3). This environmental scan examines activities and opportunities for targeting each of those actors.

Figure 3: Framework, Key Activities, and Targets



The remaining sections of this report are organized around this framework—starting with opportunities to increase utilization of preventive services based on the existing barriers, facilitators, and examples of existing activities targeted at the state Medicaid/CHIP agency (and MCOs), delivery system, and patient levels. That section is followed by a summary of evidence around outcomes from preventive service use.

Methods

We used a systematic approach to identify and synthesize available information on the above topics from both peer-reviewed and gray literature. A period of the past five years was selected to examine information that would be most relevant to the context in which the ACA was passed and implemented. First, we identified search terms reflecting specific preventive services covered by the USPSTF recommendations and initial adult core set, as well as the actors and activities covered in our frameworks. We then conducted Internet searches to identify, retrieve, and compile citations, and then selected from these citations those materials that warranted detailed abstraction and review. A diagram accounting for the number of abstracts initially identified and those ultimately selected for review is included in appendix E.

Peer-reviewed literature

We searched PubMed and CINAHL for peer-reviewed research articles. For all required topics, we generated targeted search protocols and a set of inclusion and exclusion criteria that emphasized the retrieval of articles reporting empirical research that were published in the past five years (2009 and later). Keywords, medical subject headings (MeSH terms), and inclusion/exclusion criteria are provided in appendix A. We identified a set of key themes, evaluation criteria, and data points to extract based on the research topics and in consultation with CMS, and revisited and adjusted these criteria after the initial review of article abstracts was complete.

Gray literature

We reviewed a limited number of websites of major nonpartisan research or advocacy organizations that are specifically focused on preventive services. We examined these websites for research reports and white papers related to preventive services; these were subject to the inclusion/exclusion criteria applied to peer-reviewed literature. A list of websites reviewed is provided in appendix D.

Additional resources

Our initial search was limited to peer-reviewed and gray literature published within the past five years. This allowed us to focus primarily on the most up-to-date findings. However, to avoid having too narrow a scope, we supplemented our scan with additional seminal literature, including several articles published outside our five-year scope, as suggested by senior advisors to this project. These resources are cited throughout but are not included in the extraction results below.

Results

Based on the search term criteria, the research team identified 3,351 citations for review. We then reviewed the abstracts for each citation based on the criteria in the decision tree figure found in the appendix to identify articles for full-text review. Ultimately, 280 peer-reviewed articles were identified for full-text review. Information from these articles was abstracted on the key findings, implications, study design and generalizability, preventive service type, and focus of article based on our framework categories (utilization, cost/outcomes, and/or activities). For articles focused on activities, type and target of activity were also recorded. Upon full-text review, 52 articles were excluded as not relevant, leaving 228 peer-reviewed studies that are included in either or both the adult and child reports. In addition, 21 articles from the gray literature were selected for full review. We included information from 7 other sources (for example, toolkits from provider association websites, fact sheets from federal agency websites) that were suggested to us by team members or project consultants. These documents

went through the same abstraction process as the peer-reviewed literature. In total, information was extracted from 256 sources. For clarity, the included sources are referred to as “articles” in the corresponding tables. Appendix E shows the extraction results.

Categorization of articles

To divide articles between the adult and child reports, we categorized the final 256 documents by population. Overall, 158 articles that focused on the adult and pregnant women populations were included in the adult report; 93 articles that focused on the adolescent, child, and infant populations were included in the child report; and 22 articles that did not specify a specific population were included in both reports. We categorized the articles by population, insurance type, study design, scope, preventive service focus, outcome, and activity target. Included articles were often classified in multiple categories in all these areas except study design. Thus, the article counts in each table do not add up to the total number of articles reviewed.

Of the 180 articles included in the adult report, 129 were focused on adults in general and 31 were about pregnant women (table 2). In terms of insurance type discussed in these articles, most were about patients with Medicaid (92). Other types of insurance included in our reviewed articles include private (29), other (24), and managed care or HMO (18). Three articles in the adult report were related to CHIP.

Table 2: Classification of Articles by Population, Adult Report

<i>Classification</i>	<i>Number of Articles</i>
Population	
Adult	129
Pregnant women	31
Not Specific	22
Insurance Type	
Medicaid	92
Private	29
Other	24
MCO/HMO*	18
CHIP	3

*Not restricted to Medicaid managed care organizations

In table 3, we categorized articles by five types of study design: experimental, quasi-experimental, nonexperimental, nonresearch, and other. We also categorized articles by their scope: national, some states, one state, some organizations or locality, and one organization or locality. In terms of study design, most (87) had a nonexperimental study design. These included articles that used quantitative cross-sectional methods, such as descriptive analyses. In addition, 53 articles in this report used a quasi-experimental study design, 15 articles used an experimental study design, and 15 were nonresearch articles. Table 3 also shows how we categorized articles by their scope. In terms of generalizability, the majority of articles were either national (67 articles) or focused on one state (43 articles).

Table 3: Classification of Articles by Study Design and Scope, Adult Report

<i>Classification</i>	<i>Number of Articles</i>
Study Design	
Nonexperimental	87
Quasi-experimental	53
Experimental	15
Nonresearch	15
Other	3
Scope	
National	67
One state	43
One org/locality	26
Some orgs/localities	20
Some states	12

We included articles that discussed primary or secondary preventive services recommended by the USPSTF and CMS core measures. Some articles discussed more than one preventive service, and we categorized these additional services in each appropriate category. Table 4 displays the total number of articles focused on each preventive service. Additionally, some articles were not categorized as focusing on a specific preventive service if they were included due to the type of activity that was described. In the articles included in this report, many included various cancer-related services: breast and cervical cancer screenings and preventive medications (34), colorectal cancer screenings (25), and other or multiple types of cancer screenings (8). Articles also focused on prenatal care and screenings (20), sexually transmitted infections screening and counseling (19), diabetes screening and Hb1C testing (16), substance abuse screening and counseling (12), vaccines (8), well-care visits (4), blood pressure, cholesterol, and cardiovascular disease screenings (4), preventive dental services (3), and mental or behavioral health related services (2). In addition, 32 articles were categorized as focusing on “other” preventive services, of which many dealt with preventive services as a general subject, rather than a specific one. These articles were mainly from the gray literature and non-peer reviewed documents.

Table 4. Classification of Articles by Preventive Service, Adult Report

<i>Classification</i>	<i>Number of Articles</i>
Preventive Service	
Cancer: breast/cervical	34
Other	32
Cancer: colorectal	25
Prenatal care/screenings	20
STI screening/counseling	19
Diabetes/obesity	16
Substance abuse	12
Cancer: other or multiple	8
Vaccines	8
Well-care visits/screenings	4
Blood pressure, cholesterol, CVD	4
Dental	3
Mental or behavioral health	2

Notes: Four articles reviewed were not classified with a specific preventive service. This table also includes additional preventive services; see explanation in text.

Table 5 shows the outcomes and potential actors to target for activities categorized in our included articles. In terms of outcomes, most articles in the adult report were focused on utilization of or access to certain preventive services (112), while 46 discussed the health or cost outcomes associated with the specific services. The actor categories of the surveyed articles was more evenly distributed, with 63 focusing on patients, 58 on states or managed care organizations, and 53 on providers.

Table 5. Outcomes and Activity Targets, Adult Report

<i>Classification</i>	<i>Number of Articles</i>
Outcome	
Utilization/Access	112
Health/Cost	46
Target of Activity	
Patient	63
State/MCO	58
Provider	53

Overall, the literature covered a wide range of topics in terms of services and activities but did not provide a depth of evidence for any particular topic, likely due to the five year time period included. The following sections summarize findings from the articles and their implications for promoting preventive services among Medicaid adults.

III. Opportunities to increase utilization of preventive services

Despite the potential health and cost benefits of recommended preventive services, utilization of preventive services remains less than optimal due to myriad of factors at the state and MCO, provider, and patient levels. This section describes the dynamics that increase or limit the use of preventive services at each of these levels, as well as the opportunities these dynamics may provide for intervention. The following sections are organized by the potential targets of activities to increase utilization of preventive services.

Examples of existing activities found in the literature that target each of these levels are also described. In most cases, these are examples and not generalizations as many of the studies described below were based off a small number of organizations and were descriptive with no comparison group. However, these examples may highlight potential strategies and approaches to improving access to and the utilization of preventive services in the current context of increased coverage for preventive services through the ACA. Overall, the focus is on Medicaid and CHIP, although some examples from the private sector have been included where the lessons seemed applicable.

State and MCO

States play an important role in preventive services utilization through Medicaid coverage policies, provider payment, and other incentives for quality improvement. MCOs were included in our search because they play an increasingly important role in the implementation of Medicaid benefits. Given the early stage of ACA implementation, rates of state participation in specific ACA provisions has not yet appeared in the literature. However, a recent GAO report found that, prior to ACA implementation, most states had goals and initiatives for children's preventive care use, but did not cover all the preventive services for adults. For example, intensive counseling to manage obesity and high cholesterol were particularly poorly covered among states (United States Government Accountability Office 2009). Some state participation rates will be documented in a future report on the first year of implementation of ACA section 4106 produced through this project.

States and MCOs are potential targets for activities that both increase coverage and equip states and health plans with effective resources to influence providers and patients. Some articles described barriers in coverage implementation, which may provide opportunities for targeted activities while other described the use managed care to promote preventive services utilization.

Health plan-level factors

Barriers in coverage implementation. A number of barriers at the health plan level exist that may prevent patients from accessing preventive services, even if insurance coverage for these services are available. A few articles described barriers that remained despite state mandates on private health plan coverage of specified preventive services. Although not specific to Medicaid, these articles may provide some useful lessons on how such mandates or incentives in Medicaid may be implemented, and the associated barriers that may remain.

One study focused on health plan implementation of chlamydia screening benefits and found that health plans faced barriers identifying members who are at risk for chlamydia, had concerns about contacting minors, and experienced cultural barriers in promoting chlamydia screening (Atherly and Blake 2013). In addition to barriers related to member outreach, differences in health plan

interpretation of state mandates may prevent the intended benefits from being accessible to health plan beneficiaries. For example, in 2009 Colorado passed a law requiring private health plans to cover all USPSTF A and B recommended services. However, one study conducted interviews with medical and QI directors of seven local Colorado commercial health plans and found differences among how these health plans interpreted certain recommendations, including tobacco screening and pharmacotherapy, colorectal cancer screening, and obesity screening and counseling. Only one health plan communicated the scope, eligibility criteria, and content of the new preventive services coverage to its members or providers (Rodriguez, Osborne, and Jacobellis 2011).

An additional study explored differences in the way private insurers approached cost-sharing for colorectal cancer screening, and found that patients may face unexpected cost sharing in certain clinical situations, such as when a polyp is detected and removed during a screening colonoscopy (Pollitz et al. 2013). This mandatory coverage first applied to private health plans but is now also mandatory for Medicaid expansion populations as well as for traditional Medicaid populations in states that take up 4106.

These studies suggest that despite state requirements (and, similarly, requirements by state Medicaid programs) that health plans provide a certain level of coverage, differences in interpretation of covered services may affect Medicaid beneficiaries access to preventive services. In order for Medicaid beneficiaries to receive coverage for potential benefits under the ACA, there remains the additional barrier of state interpretation, the take-up of federal requirements, and incentives before it reaches the stage of health plan implementation.

Managed care

There were a couple of articles that mentioned state Medicaid use of managed care to promote the use of preventive services among women, specifically preconception and prenatal care. One article described how some states contract with health plans, HMOs, preferred provider networks, or PCCM providers to encourage the delivery of well-woman, postpartum, and other preventive services for women (see highlight 1) (Johnson 2012). An additional study found that the transition to Medicaid managed care in Puerto Rico was associated with an increased use of prenatal care services (Marin et al. 2009). These studies suggest that policies that encourage use of managed care among state Medicaid programs may have a positive effect on use of preventive services.

Highlight 1: State Medicaid Agencies Share Approaches to Addressing Preconception Health Needs

There is evidence that preconception care improves health outcomes for both women and their children. However, design features of Medicaid programs have posed barriers to providing coverage during the preconception period. States have taken a number of approaches to overcome these barriers. For example, over half of all states have Medicaid family planning waivers and state plan amendments to provide family planning coverage for some contraceptive services. Coverage, however, may be most important for women who have had a previous adverse pregnancy outcome, yet waivers to cover interconception care have been less common, and a few were denied by CMS between 2006 and 2008. In 2011, Georgia became the first state to receive approval from CMS to demonstrate the effectiveness of interconception care for women on Medicaid who had a prior adverse pregnancy outcome.

In 2010, Medicaid agencies from seven states participated in a peer-to-peer learning project on strategies to reduce women's health risks prior to or between pregnancies. This project included California, Florida, Illinois, Louisiana, North Carolina, Oklahoma, and Texas, and it was jointly funded by the Centers for Disease Control and Prevention and The Commonwealth Fund. The project brought together state teams, including representation from Medicaid agencies, Title V Maternal and Child Health, women's health, and private-sector programs to develop programs, policies, and infrastructure needed to identify and reduce women's health risks before conception or after an adverse pregnancy outcome. This learning project focused on key strategies that states can use to improve preconception and prenatal care, including family planning waivers, state plan amendments, interconception care waivers, managed care approaches, and use of Medicaid data for quality improvement. A result of this project was a checklist to help states identify improvement opportunities that fit within their approach to Medicaid coverage for women of childbearing age, delivery models, existing QI efforts, and public health resources.

Implications: Recommendations from this project may be helpful as changes in Medicaid eligibility in many states may result in many women of childbearing age joining the program. Particularly for women of childbearing age, health reform provides opportunities for states to support a more seamless continuum of care for women by linking preventive, preconception, prenatal, family planning, and other medical care. States have a number of options for approaches to improving the health of women and children.

Source: Johnson (2012).

Implications

Despite policies that require insurance coverage for preventive services, barriers may occur at the state or health plan level when implementing these benefits. In particular, there may be variability in the interpretation about which services should be covered and when cost-sharing should apply. Resources that provide detailed explanations of benefits, as well as strategies for enrollee outreach, may assist states and health plans in uniformly and effectively providing coverage for services as intended. In addition, lessons from examples where managed care has been successfully used to promote preventive services, such as pre-conception and prenatal care, may be useful to states and health plans.

Delivery systems and providers

Delivery systems and providers also have the potential to either facilitate or impede preventive service utilization. This section outlines findings from the literature on provider factors associated with utilization of preventive services, as well as activities aimed at increasing access to preventive services by targeting providers. These activities include provider education, quality improvement activities, payment incentives and quality measuring and reporting.

Provider-level factors associated with preventive service utilization

The literature demonstrates that certain provider characteristics affect the likelihood of a number of preventive services. These include provider knowledge of insurance benefits, inconsistent recommendations, volume of patients eligible for particular services, payment, and models of care such as patient-centered medical home.

Gaps in knowledge and inconsistent recommendations. Several articles identified gaps in physician knowledge as a barrier, which may point to opportunities for provider education. For example, two articles found that low knowledge among providers of insurance coverage for a screening was associated with lower screening rates—in one case for colorectal cancer screening (Nichols et al. 2009) and in another case for chlamydia screening (McGrath et al. 2011).

There is also some evidence that there are differences in the services providers recommend based on certain patient characteristics. For example, with STI screenings, there is evidence that providers target those patients perceived stereotypically as “high risk” based on race/ethnicity or insurance coverage (rather than based on clinical guidelines), which may be a barrier to routine screening as recommended (McGrath et al. 2011; Rauscher et al. 2012; Schuur et al. 2009; Mohammad and Khan 2010). There is also evidence that providers may be less likely to recommend services to certain patients based on socioeconomic status or educational status. In an examination of the role of patients’ socioeconomic status and colorectal cancer screening rates, researchers found that patients who had a high school education or less were less likely to have received a provider recommendation for colorectal cancer screening than those with higher levels of education (Ye, Xu, and Aladesanmi 2009). An additional factor that has been associated with provider recommendation of preventive services is gender concordance with the patient (Shires et al. 2012). These differences may suggest provider education is required to screen consistently according to the USPSTF guidelines, particularly as provider recommendation is associated with increased screening rates (Kim et al. 2012).

Volume of eligible patients. A couple of studies found that the volume of patients at a given provider, practice, or hospital who are eligible for a particular preventive service was associated with use of that service among the eligible population. For example, providers with fewer patients at risk for skin cancer (Oliveria et al. 2011), practices with fewer patients eligible for colorectal cancer screening (Weiss et al. 2013), and hospitals in areas with lower prevalence of HIV (Herrin et al. 2013) are all less likely to conduct these respective screenings on eligible patients. These findings suggest education and outreach may be needed for providers around particular preventive services where it may not apply to a large number of their patients.

Payment incentives. Additional articles pointed to low provider payment as a potential barrier to preventive services utilization. For example, higher Medicaid fees have been found to increase the number of private physicians who see Medicaid patients and to lead to more care being available through a physician’s office, while cuts tend to lead patients into emergency and outpatient

departments (Decker 2007, 2009). Higher state Medicaid-to-Medicare fee ratios were correlated with greater acceptance of new Medicaid patients. One article estimated that a 10 percent increase in primary care fees could increase primary care visits by 8.8 percent, and also yield a six-fold return in lower Medicare costs annually (Reschovsky et al. 2012). A national hospital survey found lack of reimbursement may be a barrier to HIV screening, and that admitting at least 15 percent Medicaid patients and receiving resources or reimbursement for screening was associated with screening more patients (Herrin et al. 2013).

Two articles suggested that lack of provider willingness to provide care for Medicaid patients may be a barrier to receiving preventive services. One study in Connecticut found the limited number of physicians and practices that accept Medicaid patients may create longer wait times for colonoscopy (V. B. Patel et al. 2013). Another study in Oregon found 8 percent of Oregon mothers reported they had experienced insurance-based discrimination during prenatal care, and these women were predominantly uninsured or Medicaid beneficiaries (Thorburn and De Marco 2010). These findings suggest that current levels of Medicaid reimbursement may be insufficient to encourage provider participation, which may increase problems with access as the Medicaid expansion occurs and more Medicaid patients seek care.

Patient-centered medical homes. Several studies examined or commented on the potential for health care delivery models aimed at improving quality, such as patient-centered medical homes (PCMH), to increase the use of preventive services. One early description of PCMH initiatives for Medicaid beneficiaries in 17 states described patient-centered care had increased the use of evidence-based primary care, including screening for breast and cervical cancer, and decreased the cost per patient per year by \$29 (Takach 2011). Another study found that patients who reported receiving care where fundamental PCMH principles were in place were more likely to have visited the doctor and to have received flu shots than those who received care in settings that did not meet PCMH principles (Pourat, Lavarreda, and Snyder 2013).

In addition, one commentary discussed that while PCMHs have been emphasized as a way to improve chronic care to decrease use of hospital services, there has been a lack of emphasis on the potential for medical homes to provide preventive services such as cancer screenings. This article then describes the capacities needed in a medical home to integrate cancer screening and other preventive services, such as health risk assessment, use of registries, ability to track and follow up on tests, feedback on performance, and payment incentives for such services (Sarfaty, Wender, and Smith 2011). One issue brief suggested integrated health models such as PCMH may help address challenges in identifying and treating depression among low-income mothers and decrease the fragmentation between primary care and mental health care (Howell, Golden, and Beardslee 2013).

Activities targeting providers

A number of articles in the literature focused on activities targeting providers to increase the availability of preventive services. The activities described below most commonly focus on educational and quality improvement approaches. A few articles focused on payment incentives, and very few articles mentioned quality measurement or reporting.

Provider education. Four articles described educational activities around preventive services targeting clinicians or practices, and two of these described small-scale interventions specifically targeting nurses. Among the two articles focused on nurse education, one described a statewide training program for rural-based health professionals on STIs aimed at conducting sexual histories, risk assessments,

screening, treatment, and the ability to provide patient education around risk reduction. Nurses made up 74 percent of participants in this training (Lifson et al. 2009). An additional article described an educational intervention for six nurse practitioners at a college health center around skin cancer screening, use of a screening tool, and providing patient education. This intervention resulted in a 223 percent increase in proper documentation of skin cancer screening and patient education (Bradley 2012).

Highlight 2: The Wisconsin “Medicaid Covers It” Campaign

The “You Can Afford to Quit: Medicaid Covers It” campaign was developed through a partnership among the University of Wisconsin Center for Tobacco Research and Intervention, the Wisconsin Medicaid Program, and the Wisconsin Department of Health Services. The campaign aimed to increase awareness among health care providers and consumers that the Wisconsin Medicaid program covers tobacco cessation. The campaign included educational materials for both clinicians and consumers, including summaries of Medicaid cessation benefits for clinicians, billing staff, and pharmacists; laminated reminder sheets for practices; and patient education materials including brochures and posters in English and Spanish. Materials were distributed to HMOs online and through academic detailing between 2006 and 2008. A quasi-experimental design was used to compare Medicaid HMO enrollees who received the intervention to those enrolled in fee for service, before and after the campaign.

The campaign appears to have contributed to increased rates of pharmacotherapy claims for smoking-cessation medication as well as use of the Wisconsin Tobacco Quit Line in the HMO group compared to the FFS comparison group. Both increases were statistically significant.

Implications: Education targeting both providers and patients about specific Medicaid benefits such as smoking cessation may be an effective way to improve utilization rates. Medicaid MCOs may be an effective channel for distributing such educational materials.

Source: Keller et al. (2011).

The remaining two articles examined the effectiveness of interventions that included a provider and patient education component. One article examined the effect of an educational campaign aimed at raising awareness among providers in Wisconsin that Medicaid covers tobacco-cessation services (with an accompanying component to increase consumer demand for these services). Pharmacotherapy claims for the group exposed to the campaign increased compared to those not exposed to the campaign (see highlight 2) (Keller et al. 2011). The other article examined the effect of a controlled trial where a health plan targeted practices to receive academic detailing around colorectal screening while patients received a decision aid in the mail. Health plan members in the intervention group were not significantly different in their colorectal screening than the control group (Pignone et al. 2011). It is worth noting that another study including six practices in one state using a mailed patient decision aid and also did not find a significant difference in colorectal screenings (Leone et al. 2013), further highlighting the challenges of increasing colorectal screening rates.

Quality improvement activities. Another potential strategy to increase preventive services provided is through quality improvement. Two articles described the use of provider alerts or reminders, and one article talked about the use of practice facilitators.

Both articles on the use of provider alerts described the use of health IT to deliver these alerts. One article reviewed a number of health IT strategies currently used to prevent diabetes, with mixed

evidence on the effects on health care quality. This suggests that patient engagement might also be required to improve outcomes (Ahmed et al. 2013). Another article reported findings from a randomized controlled trial where a PDA-based decision support system on depression was used to remind nurses to administer depression screenings. Nurses who received reminders screened 52.5 percent of the time but had lower screening rates for Medicaid/CHIP patients (Schnall et al. 2010). This study demonstrates that despite reminders, clinician decision making may still result in certain disparities in preventive service use.

Additional practice level changes may further increase delivery of preventive services. In one such case, an expanded intervention included a systems approach to identifying smokers, advising and assessing readiness to quit, faxing referral of preparation-state smokers to a quit-line, and providing feedback of data to practices. This intervention was part of a cluster randomized trial that found increased delivery of cessation support for primary care patients by 12.5 percent beyond traditional tobacco-use vital sign screening alone (Rothemich et al. 2010).

One article described how practice facilitators (or coaches)—specially trained individuals who help practices improve the quality of care they provide (Knox and Brach 2013)—have been used to support and improve education and quality improvement efforts within practices, particularly around prevention, since the early 1980s. However, the effectiveness of practice facilitators have frequently been studied in combination with other interventions or through nonexperimental study designs, making their effect on preventive service utilization not well documented or understood (Nagykaldi, Mold, and Aspy 2005).

Payment incentives. Only two articles mentioned payment incentives for providers. One was a study evaluating the effectiveness of a health plan offering \$100 incentives to both patients and their Ob/GYN or midwife for timely and comprehensive prenatal care among a predominately low-income, Hispanic population. Participation in the incentive program was significantly associated with lower odds of neonatal intensive care unit admission and health care spending during the first year of life, suggesting a small patient and provider incentive may be effective in increasing the use of recommended prenatal care among low-income women (Rosenthal et al. 2009).

The second article described the availability of billing codes for substance abuse screening and brief intervention. According to a state Medicaid survey, although 28 Medicaid agencies approved such billing codes as of 2010, only 19 states offered reimbursement for these codes. Medicaid budgetary issues prevented many states from providing reimbursement for these codes (Fussell, Rieckmann, and Quick 2011).

Quality measuring and reporting. Very few articles mentioned quality measurement and reporting, and none mentioned the Medicaid adult core measure set. However, there is previous evidence that shows that while quality measurement and reporting does not affect patient choices, it does affect provider behavior and is an important tool for quality improvement (Hibbard, Stockard, and Tusler 2003; Hibbard 2008). Among the articles in this review, a couple focused on the measurement and reporting of chlamydia screening. One study found that physicians who receive feedback from HMOs are more likely to report frequent chlamydia screening (Pourat et al. 2011). Another commentary discussed the challenge of measuring receipt of chlamydia screening due to conflicting data depending on the measure used. This article points to the need for better measures on chlamydia screening and the use of electronic medical record data as a potentially more accurate source for these measures (Chow 2012).

Although not specific to primary or secondary prevention, an additional small study pointed to a potential risk of quality measurement and reporting. A survey of 150 physicians and residents who work in emergency medicine in North Carolina found that as a result of a CMS measure for antibiotic administration for community-acquired pneumonia, more than half of the respondents had prescribed antibiotics to patients they did not believe had pneumonia in order to avoid noncompliance with the CMS guideline (Nicks, Manthey, and Fitch 2009). This study points to the importance of unintended consequences associated with quality measurement efforts.

Finally, two articles described federal initiatives that will likely increase the ability to measure quality as part of both the ACA and the American Recovery and Reinvestment Act. The National Prevention Strategy (part of the ACA) includes a requirement that the CDC monitor and report on a set of clinical preventive services in the US adult population (Coates et al. 2012). The second article mentions how meaningful use criteria, for which providers can receive incentives through the Medicare and Medicaid EHR Incentive Programs (part of the HITECH act under ARRA), will require providers to report on quality measures such as those related to diabetes prevention (Ahmad and Tsang 2013).

Implications

A number of provider-level factors limit or prevent the use of preventive services, including lack of information on the part of providers about services covered, inconsistent implementation of guidelines, small volume of eligible patients for a particular service, and financial barriers. However, some articles suggest that new payment and delivery models, such as patient-centered medical homes, may increase the frequency with which recommended preventive services are provided.

Despite the number of provider-level barriers, the evidence around effective activities targeting providers remains highly variable and inconclusive. There are likely a number of additional quality improvement activities currently occurring in individual organizations that have not made it into the published literature. Among articles identified from the past five years, it appears there may be a number of opportunities for provider education and quality improvement, and that targeting nurses may be particularly effective. In addition, pairing provider-level with patient-level interventions may increase the likelihood of success.

Patients

Our review of the literature pointed to a number of patient-level factors that influence access to, and use of, preventive services. Articles from the past five years demonstrated a link between preventive services utilization and insurance coverage, age, health status, education, access to transportation, having a usual source of care (main provider), marital status, family history of disease, income, and race and ethnicity (Kenkel 1994; McMorrow, Kenney, and Goin 2014; Lange 2011). Gender has also been found to play a role, with women more likely than men to receive needed preventive services (Alexandraki 2012; Vaidya, Partha, and Karmakar 2012).

Patient-level factors influencing utilization

Insurance coverage. In our review of the literature, access to health insurance coverage was linked to increased use of most preventive services (Allen et al. 2009; Carney et al. 2012; Gold et al. 2009, 2012; Fuentes-Afflick and Hessol 2009; Takayama, Wetmore, and Mokdad 2012). One study found that differences in insurance coverage explain 25 percent to 40 percent of the disparities in preventive service use by income (but education, age, and health status were also shown to be important

determinants of preventive service use) (McMorrow, Kenney, and Goin 2014). Additional evidence suggests that insurance coverage (Kenkel 1994) is a determining factor for patients and can delay or diminish their receipt of preventive care. Coverage gained through the ACA could substantially improve preventive service use among the uninsured, particularly for those who gain coverage through Medicaid expansions, as well as those who purchase private coverage through state health insurance exchanges (McMorrow, Kenney, and Goin 2014).

For example, an evaluation of influenza vaccination rates among adults ages 18 to 64 showed that the strongest predictor of vaccination status was health insurance coverage. Similarly, an evaluation of diabetic patients accessing care at safety net clinics in Oregon showed that patients with continuous insurance coverage received more preventive screenings compared with their uninsured and partially insured counterparts. During the three-year study period, 48 percent of continuously insured patients received three or more cholesterol screenings, 25 percent received three or more flu vaccinations, and 72 percent received three or more HbA1c screenings. In contrast, those with partial insurance coverage (of any duration) received fewer preventive services (Gold et al. 2012). A comparison of screening rates before and after introduction of deductible-free preventive service coverage found that the decline in cost-sharing caused patients to use additional preventive services (about 23 to 78 additional uses per 1,000 eligible patients) (Meeker et al. 2011). These studies suggest that despite coverage, cost-sharing may be a barrier to preventive service utilization.

Our sample included a few articles related to cost-sharing. Reduced cost-sharing may have some effect on promoting the use of colorectal cancer screening (Khatami et al. 2012; Dorn et al. 2012). As uninsured individuals are required to purchase products on the state health insurance marketplaces, it will be critical to educate consumers about health insurance terms and the mechanics of health insurance coverage, including cost-sharing, copayments, deductibles, and co-insurance. Studies in the literature review showed that many consumers are confused by cost-sharing and have difficulty estimating out-of-pocket costs, even when information was provided by a health insurance plan (Quincy 2011). To alleviate the confusion, information such as key definitions, linking consumers to scenarios, or including numeric examples may help improve the utility and understanding of educational materials.

A number of articles in our sample addressed the association between Medicaid coverage specifically and preventive service use. This association has recently been demonstrated through the Oregon Health Insurance Experiment, where utilization of preventive care significantly increased after gaining Medicaid coverage through random assignment (Finkelstein et al. 2012). Twenty-nine articles explicitly examined the association between Medicaid coverage and use of specific preventive services, the most frequently occurring of which were diabetes, substance abuse, and smoking cessation. Most studies demonstrated that having access to Medicaid coverage increased the likelihood that patients would receive screening services. For example, patients with public health insurance were more likely to have had a colorectal cancer screening within the past year (Tu et al. 2010), and women with Medicaid coverage were more likely than women with Medicare coverage or no insurance to have had a cervical cancer screening (Coronado, Thompson, and Chen 2009).

Several articles discussed Medicaid coverage and smoking cessation. A 2010 analysis in *Morbidity and Mortality Weekly* found that Medicaid enrollees have nearly twice the smoking rates (37 percent) of the general adult population (21 percent), and that smoking-related medical costs are responsible for 11 percent of Medicaid expenditures (McMenamin et al. 2010). Smokers with Medicaid coverage receive more messages to quit from their physicians, compared to patients with private coverage (Bandi et al.

2012). Medicaid coverage of smoking cessation, including pharmacotherapy and behavioral therapy, was positively associated with attempting to quit, as well as successful quitting (Liu 2009, 2010).

The type of health insurance coverage also influenced the site of service for preventive screenings. One study found that women on public coverage were more likely to receive mammography services from a university institution, compared to women with private coverage who were more likely to receive mammograms at a private clinic (Rauscher et al. 2012). Additionally, minority women with public insurance are more likely to obtain mammography from institutions with fewer resources (more likely to be a public hospital, with a high rate of uninsured patients), and less likely to have mammograms read by breast-imaging specialists or have access to digital mammography (Rauscher et al. 2012).

Usual source of care. The literature showed that a connection to a usual source of care or a regular health care provider increased the probability that Medicaid beneficiaries received preventive screenings. For example, disabled Medicaid beneficiaries with their own health care provider received 0.73 more preventive services on average than those without their own doctor, and beneficiaries with a usual source of care received 0.85 more preventive services on average than individuals who used the emergency department or had no usual source of care (Allen et al. 2009). Having access to a personal health care provider also had a positive influence on receiving regular cervical and breast cancer screenings (Cardarelli, Kurian, and Pandya 2010). Though access to a primary care provider can play an important role in ensuring women get screening for breast and cervical cancers, promoting screenings with newer technologies, particularly among specialists, proves to be important. A study examining the uptake of human papillomavirus (HPV) DNA tests showed that specialists (obstetricians and gynecologists) were significantly more likely than primary care providers to administer HPV DNA tests, and that the uptake of new cervical cancer screening protocols can occur quickly among traditionally underserved groups and may be aided by early adoption by specialists (Price 2010).

Race and ethnicity. There was conflicting evidence regarding the influence of race and ethnicity on use of cervical and breast cancer screening services. Two studies examining Medicaid claims data from West Virginia found that white women are more likely to receive cervical and mammography screening, compared to nonwhite women (Nadpara et al. 2012; Bhanegaonkar et al. 2012). Some studies, however, found that minority women were more likely to receive screenings in certain communities. For example, one cross-sectional study indicated a strong association between race and ethnicity and Pap smear screening in 10 community health centers in Florida; Hispanics were twice as likely, and black women were 1.45 times more likely to receive Pap smear screening compared to white women (Cook et al. 2010). Similarly, a survey of 20 communities in a rural area of Washington state found that being Hispanic was directly associated with receiving a cervical cancer screening within the last year (Coronado, Thompson, and Chen 2009). With respect to genetic screening for breast cancer, our literature review included one small study that suggested nonwhite women were less aware of genetic screening for breast cancer compared to white women, even with a family history of cancer (Glenn, Chawla, and Bastani 2012), while another study in one health center found no disparity in BRCA testing by race (Olaya et al. 2009). One survey of mammography facilities in the Chicago area found minority women with public insurance were more likely to receive mammograms from institutions with less-favorable characteristics such as with lower levels of technology (Rauscher et al. 2012).

Interviews with 33 women found some African American women were concerned about the misuse of genetic information, reducing the uptake of BRAC1 testing; this was true even for women with a history of breast cancer (Glenn, Chawla, and Bastani 2012). In an analysis of National Health Interview Survey data between 2000 and 2005, Hispanic men were found to be slightly less likely to follow colorectal

cancer screening guidelines compared to white men, indicating that culturally appropriate messaging could mitigate this disparity (Zhou et al. 2011). Development of messaging should consider both target populations as well as barriers related to specific preventive services. For example, one study that included a survey and focus group with patients ages 50–75 found a number of complex barriers to colorectal cancer screening such as fear, lack of information, time, the role of physicians, and access to care. There are also barriers that have little documentation in the literature, such as low self-worth, "para-sexual" sensitivities, fatalism, negative past experiences with testing, and skepticism about the financial motivation behind screening recommendations that must be considered when developing messaging around colorectal cancer screening (Jones et al. 2010).

One study using National Health Interview Survey data from 2000 to 2008 found that rates of colorectal cancer screening did increase for all racial/ethnic groups among those with insurance during that time period. However, in 2008 Hispanics were less likely to receive colorectal screening. This study found no significant changes in black-white disparities over this time period for cervical, breast, and colorectal cancer screening, although some Hispanic-white and Asian-white disparities were reduced or even eliminated over this time period (Shi et al. 2011).

Health risk factors. A few studies showed that possessing certain risk factors affect the likelihood that patients will get screened for some specific, but not all preventive services. For example, overweight or obese men were more likely to receive cholesterol or glucose screening but less likely to receive screenings for colorectal or prostate cancers (Quinn et al. 2012). An additional study found increasing body mass index was associated with receipt of recommended preventive services in one integrated health system (Shires et al. 2012). A review of the prevalence of screening for osteoporosis or idiopathic fracture in Maryland Medicaid administrative records found that screening rates for women with substance use disorder differed significantly from women in a control group (Kelly et al. 2011). In contrast, among men at high risk for hepatitis C (males born between 1945 and 1964, and/or who had ever used intravenous drugs), HPC screening was more likely compared to men with no risk factors, but screening rates were still suboptimal (Roblin et al. 2011). Although it may be expected that those at higher risk may be more likely to use a particular preventive service, studies have found that adults with asthma and daily smokers are both significantly less likely to receive an influenza vaccine even though this infection is particularly dangerous for these individuals (Lu, Euler, and Callahan 2009; Vander Weg, Howren, and Cai 2012). Daily smokers have also been found less likely to receive cancer screening despite their increased risk for cancer (Vander Weg, Howren, and Cai 2012).

Some of the literature suggested that there are opportunities to pair preventive service education and outreach related to specific health risk factors, particularly with mental and physical health. For example, the prevalence of osteoporosis appears markedly elevated in those with major mood disorders and those over age 55 dually diagnosed with schizophrenia and substance abuse disorder, suggesting that targeted education to providers on the importance of meeting the preventive health needs of this vulnerable population may improve screening rates (Kelly et al. 2011). Another study demonstrated that pregnant women with a history of mental health issues had higher odds of continued smoking (Holtrop et al. 2010), suggesting there may be opportunities to screen for and treat these health issues together. However, one study using BRFSS data in Kentucky found that those with self-reported poor mental health were less likely to receive regular mammography screening. Although the relationship between mental health and use of preventive screenings is not well understood, this article suggests specific strategies may be needed to encourage women with mental health symptoms to receive regular screenings such as mammography (Masterson, Hopenhayn, and Christian 2010). There is evidence that depressive symptoms affect the patient-provider relationship, negatively affecting provider

recommendation of services as well as preventive service use. The delivery system may also be poorly organized to accommodate the use of preventive services by those with depressive symptoms. This evidence suggests such factors that may affect the use of preventive services should be considered when treating patients with depressive symptoms (Thorpe et al. 2012).

Transportation. Finally, a couple of articles suggested that access to transportation might be an influential factor in the utilization of preventive services. One article found that coverage for non-health care services such as transportation might reduce barriers that exist for patients despite access to coverage for preventive services. There is some evidence linking access to transportation to higher screening rates. Women living in counties where less than 2 percent of residents had no access to a car were somewhat more likely to have had a Pap test in the past three years than in areas where greater than 3 percent had no access to a car (Coughlin and King 2010). Similarly, African American men in Tennessee were likely to report lack of access to transportation as a barrier to colorectal cancer screening (Patel et al. 2012).

Patient activities and interventions

Examples of activities in the literature targeting patients were focused around state insurance coverage policies, as well as education and outreach.

State insurance coverage policies. Two state surveys examined state Medicaid coverage for specific services. Overall, Medicaid coverage of preventive services is fairly robust across the nation. A 2011 Kaiser Family Foundation survey, *Coverage of Preventive Services for Adults in Medicaid*, found that preventive services were generally well covered for adults in Medicaid fee-for-service (FFS) programs. Forty states reported covering at least 30 of the 42 recommended preventive services, including 25 states covering 40 or more such services. Cancer screenings, STI screenings, and most of the pregnancy-related services were covered by virtually every state (Kaiser Commission on Medicaid and the Uninsured 2012). This survey of state Medicaid coverage is being repeated as part of this project in 2014.

However, a review of state Medicaid websites and relevant documents conducted during the same year as this survey found it was difficult to determine from these sources what exactly is covered due to use of broad language such as coverage for “age-appropriate” or “medically necessary” services, suggesting it may be difficult for patients, providers, and insurers to implement these state coverage policies. This review also found that managed care programs tended to provide more coverage and details about standards of care to follow than fee-for-service programs (Wilensky and Gray 2013).

The second survey of state Medicaid programs found that 47 out of 51 Medicaid programs provided tobacco-dependence treatment coverage for some enrollees, 38 covered at least one tobacco-dependence treatment for all enrollees, and four offered no coverage for tobacco-dependence treatment to their enrollees. Only 5 states covered all recommended pharmacotherapies and individual and group counseling for all Medicaid enrollees, and 16 states have coverage policies that are not consistent for FFS and MCO enrollees. The ACA mandates Medicaid coverage of tobacco-dependence treatments for pregnant women, including pharmacotherapy, which effective January 2014, can no longer be excluded from prescription drug coverage (McMenamin et al. 2010).

In states where Medicaid programs opted to cover a pharmacotherapy benefit, an immediate uptick in use of these medicines occurred among beneficiaries (Land, Warner, et al. 2010), and was associated with a reduction in adverse health outcomes in some states. For example, a longitudinal analysis of

Medicaid coverage for tobacco dependence treatment in Massachusetts found a 46 percent annualized decrease in inpatient claims for acute myocardial infarction (AMI) and coronary atherosclerosis during the post-utilization period (Land, Rigotti, et al. 2010).

In addition, several articles described state mandates that private health insurance plans provide coverage for specific preventive services. For example, from 1999 to 2008, 22 states passed laws that require health insurance coverage for colorectal screening and endoscopy tests. One study of BRFSS data found that residence in a state with colorectal screening coverage mandates in place for a least one year was associated with a 1.4 percentage-point increase in the likelihood of having a recent endoscopy (Cokkinides et al. 2011). This study provides some evidence that insurance benefit mandates at the state level may be effective in increasing utilization of preventive services. However, another study looking at the effect of state mandates that health plans cover chlamydia screening in Georgia and Texas found that these states experienced similar increases to “control” states that did not introduce such mandates (Owusu-Edusei, Gift, and Chesson 2010). Barriers to the implementation of these mandates described in an earlier section may contribute to the limited effect observed from some state mandates. Although the ACA may supersede many such state mandates, issues may remain with the interpretation and execution of new benefits at the state level.

Education and outreach. The literature included some examples of education and outreach efforts targeted at patients to increase the rates of screening, although with variable effectiveness. Strategies employed by states and providers included mail and telephone information or reminders on preventive services, provider recommendations, and motivational interviewing. A recent evidence synthesis (Sabatino et al. 2012) concludes that group education is also effective at improving the rates of breast cancer screening. One-on-one education and client reminders were both found to be effective at increasing the rates of breast, cervical, and colorectal cancer screening.

States have employed a number of strategies to educate Medicaid beneficiaries about screening and other healthy behaviors. These include pamphlets regarding appropriate weight gain during pregnancy, media campaigns to educate beneficiaries about smoking-cessation treatment options, and workshops and telephone support to encourage mammography and cervical cancer screening (Rosenbloom et al. 2012; Keller et al. 2011; Peterson et al. 2012). There may also be opportunity for states to provide education on oral health among smokers calling tobacco quit-lines as a survey of 816 callers in one state found need and interest among respondents (McClure et al. 2012).

Highlight 3: Mail and Telephone Reminders to Patients Boost Mammography Rates

Recent studies have shown that patient-targeted interventions involving mailed educational materials and follow-up telephone calls may be more effective for certain types of cancer screening.

A large quasi-experimental study, conducted by Kaiser Permanente Northwest HMO, examined female members over 42 who were more than 20 months past their last mammogram ($n = 35,104$). These participants were mailed a “mammogram due soon” postcard 20 months after their last mammogram. This postcard was followed up by two automated phone calls and finally, a live phone call to nonresponders. The study used EHR data and found that before the reminder was sent out, 63.4 percent of participants got a mammogram; that number increased to 75.4 percent in the post-reminder phase. In the year after the reminders were sent out, 80.6 percent of patients had completed a mammogram. When controlling for demographics and clinic visits, women in the intervention group were 1.51 times more likely to get a mammogram after being sent a reminder, compared to the control group. This effect was maintained in the year after the intervention.

A smaller controlled trial ($n = 443$), CHOICE (Communicating Health Options through Information and Cancer Education), was designed to evaluate the effect of an intervention involving patient reminders on colorectal cancer screening. A patient-level intervention (mailing a patient decision aid on colorectal cancer screening) was combined with a practice-level intervention (academic detailing) among members of a large health plan (Aetna’s HMO insurance product) from selected areas in Georgia and Florida. The trial found that the two-part intervention had a “modest, though non-statistically significant” effect on colorectal cancer screening rates. Screening rates were 39 percent for the intervention group members compared to 32.2 percent for the usual care group (unadjusted difference of 6.7 percent). In the trial, participants in the intervention group (Aetna members ages 52–80 who, based on claims data, were not up to date on their CRC screenings) were mailed a personalized letter, decision aid in DVD and VHS formats to view (lasting 22 minutes), stage-targeted brochures, Aetna-specific co-pay and referral information, a CRC screening options chart, and a decision aid survey to assess use and reactions to the materials. Participating practices received two academic detailing sessions including information about colon cancer and screenings, practice-specific screening rates, information about the decision aid, and development of specific plans to address patient requests for screening.

Implications: The results of these studies suggest that inexpensive reminders or educational materials may be a promising activity for health plans to use when targeting patients to increase receipt of breast cancer screening but not for colorectal cancer screening, even when accompanied by additional practice-level support.

Sources: Pignone et al. (2011); Feldstein et al. (2009).

One study found that using mail and telephone reminders may be an effective tool to increase breast cancer screening rates. The Sharp Health Plan (SHP) in San Diego mailed at-risk women an informational mammography postcard reminder, followed by an automated telephone call reminder to increase the likelihood that women would seek out mammograms (Parkington et al. 2009). After the campaign, 70 percent of SHP members sought mammography screening, although 30 percent remained nonadherent. Another study evaluated the effectiveness of a mailed screening reminder letter for colorectal cancer screening and decision aid followed by telephone support from an offsite, Medicaid-based, patient navigator. The study demonstrated limited effectiveness and suggested that higher-intensity interventions, such as use of practice-based navigators (rather than offsite navigators), may be needed

to reach and improve colorectal cancer screening rates the Medicaid population (Leone et al. 2013). Findings from two additional studies that included mailed materials are summarized in highlight 3.

Physician recommendations were associated with an increased rate of screening, suggesting that messaging from clinicians might be an effective way to increase use of preventive services. Findings from the 2007 NYC Community Health Survey show that a physician's recommendation for HIV shows some promise among disabled Medicaid beneficiaries to move them toward the "preparation" stage of readiness, but not necessarily the "action" stage. Intervention participants who received motivational interviewing were three times more likely to move into the pre-preparation stage than those who received no motivational interviewing (Raveslout 2009).

Targeted outreach. Several studies in our literature review suggested that targeting certain demographic populations may improve preventive screening rates. For example, an evaluation of "Sweet Temptations," a fotonovela (a story told through photos and captions), demonstrated some success at educating Hispanics about the causes of diabetes, as well as dispelling myths about the ways in which the disease is contracted. The campaign was developed by a team of diabetes experts, Hispanic cultural experts, health educators, researchers, writers, and photographers, and uses a dramatic story about a Hispanic family to illustrate the symptoms, prevention, and treatment of diabetes. From pretest to posttest, there was a statistically significant increase in diabetes knowledge and intentions to exercise, eat fruits and vegetables, and talk with doctors and family members about diabetes (Unger, Molina, and Baron 2009).

There is some evidence in the literature that outreach and education materials need to be tailored to a populace with low literacy; approximately 87 million Americans possess only basic health literacy skills. One article examined Medicaid renewal applications by using three readability tests. Forty-five states and the District of Columbia had state reading-level guidelines for Medicaid-related materials. Of these, 24 (52.2 percent) states' Medicaid renewal applications failed to meet their own reading guidelines on all three readability tests. The authors posit that as health care reform unfolds, complying with established reading-level guidelines for Medicaid-related materials may be one strategy to improve access for Medicaid-eligible families; it may also prevent eligible families and children from losing coverage unnecessarily (Pati et al. 2012).

Some articles pointed to inaccurate or limited information about preventive services. For example, in one study researchers contacted state Medicaid offices to determine whether they reimbursed for prenatal case management, and which providers participated in the program. Findings showed that multiple attempts were required to obtain information regarding reimbursements, and provider information was often outdated, duplicative, or not relevant to the prenatal case management (Issel et al. 2011).

Implications

There is strong evidence that there is a link between insurance coverage and utilization of preventive services. This evidence suggests that coverage of preventive services provided to Medicaid beneficiaries through the ACA will have an effect on the utilization of these services. The literature identified several additional patient-level factors, such as having a usual source of care, race/ethnicity, patient beliefs or fears around certain preventive services (that at times may be specific to a certain culture), and access to transportation, that may affect use of preventive services despite the availability of coverage.

The aforementioned examples suggest that targeted patient education on specific preventive services be culturally relevant and at an appropriate reading level in order to effectively promote the use of services. Interventions that incorporate multiple modes of patient outreach may increase the likelihood of success. Providers also have the potential to play a large role in activities targeted at patients to promote the use of preventive services.

IV. Cost and health outcomes

While there were some studies from the past five years that looked at cost or health outcomes as a result of the use of specific preventive services among adults, most of the evidence base supporting the use of adult preventive services dates further back. The fact that services have been recommended by the USPSTF indicate there is enough evidence to provide high certainty that there is a net benefit to using the service (US Preventive Services Task Force and Agency for Healthcare Research and Quality 2011). Quantifying the benefits in terms of cost and health outcomes requires comprehensive investigation of the estimation methods outside the scope of this project. That said, some interesting examples from the recent literature are highlighted in this section.

There is evidence that increasing the use of preventive services results in net savings and averts the loss of life years (Maciosek et al. 2010). However, recommendations regarding target populations or screening frequency can vary, and cost-effectiveness estimates are highly sensitive to the assumptions and methods used. Cost may not be the most crucial consideration when determining appropriate screening guidelines, and is not a consideration in the development of USPSTF's recommendations (US Preventive Services Task Force and Agency for Healthcare Research and Quality 2011).

Most of the literature reviewed for this report aimed to determine an optimal frequency for preventive screenings, or focused on the cost-effectiveness of substance abuse treatments, services for pregnant women, interventions aimed at improving diet and exercise, and colorectal screening. Our findings suggest a dearth of evidence on other important prevention-focused topics, such as HPV screening, contraception counseling, and domestic violence screening, a gap that has been found in similar literature reviews (Olchanski, Cohen, and Neumann 2013).

Screening frequency and selectivity

Although the articles on screening frequency and selectivity reviewed the effectiveness of different types of preventive screenings and vary in study design and generalizability, findings generally suggest that less frequent, more targeted screening is more cost-effective. For example, a meta-analysis of randomized controlled and case-controlled studies on the benefit of screening for skin cancer with a whole-body examination by a physician found that these examinations were not more effective at reducing mortality and morbidity than skin self-examinations, nor were the physician examinations found to be more accurate or effective (Wolff, Tai, and Miller 2009). Two studies suggested that targeted screenings for those with higher risk may be more cost-effective than intensive screening for a larger population. One microsimulation model found that reducing colorectal screening frequency for individuals without a family history is cost-effective. However, among those with a family history of colorectal cancer, less frequent screening after age 40 was found to be more cost-effective than more frequent screening (Ramsey et al. 2010). Another study of men who have sex with HIV-positive men found that screening semiannually for sexually transmitted infection may be preferable to annual screening (Rieg et al. 2008).

Studies also suggested that the cost of false positives and false negatives should be considered when developing guidelines for preventive screenings. Higher screening frequency promotes a higher probability of false positives or negatives. For example, false positives can be associated with costs related to the unnecessary biopsy that follows (Braithwaite et al. 2013) and are accompanied by significant emotional cost. False negatives also have significant societal costs, and these costs are similar to undetected disease. One study that examined screening for pre-diabetes and diabetes found that while health system costs (including medical costs) improved with higher levels of screening, societal costs (including nonmedical costs such as lost labor productivity) improved or stayed the same when less screening took place, depending on type of treatment (Chatterjee et al. 2010).

Substance abuse

Unlike the literature on preventive screenings, three studies on tobacco cessation suggest more intensive treatment to be more health- and cost-effective. These studies examined coverage for treatment, counseling, and pharmacotherapy.

A systematic literature review of behavioral counseling for alcohol misuse found brief, multi-contact counseling to be associated with outcomes such as reduced drinking episodes and may also reduce hospital stays (Jonas et al. 2012). Another study found that among 21,656 MassHealth enrollees who used tobacco-cessation pharmacotherapy, there was a 46 percent decrease in inpatient claims for acute myocardial infarction and coronary atherosclerosis compared to the pre-intervention period (Land, Rigotti, et al. 2010). In addition, a cost-benefit analysis using Medicaid claims and MEPS data from 2002 to 2008 found tobacco cessation is associated with short-term savings to Medicaid programs attributable to the reduction in hospitalization for cardiovascular conditions. The study included program costs for outreach, counseling, and pharmacotherapy, and estimated that every \$1 in program costs was associated with over \$3 in medical savings (Richard, West, and Ku 2012).

Health outcomes for pregnant women

Five studies examined health outcomes for pregnant women who accessed preventive services and their newborn babies. Although these articles did not address cost-effectiveness specifically, low birth weight babies and those born preterm can be very costly. As such, curbing these health outcomes through lower-cost mechanisms such as prenatal care promote both a better quality of life as well as improved cost. Studies found some conflicting results on the effect of prenatal care on birth outcomes.

Two studies examined the effect of prenatal care on birth outcomes, with mixed findings. One review of literature published between 1989 and 2009 found that comprehensive prenatal care use among Medicaid enrollees does improve birth outcomes, although a few studies found it had no effect (Anum, Retchin, and Strauss 2010). Another study of Washington State's prenatal and postpartum care program found a marginal impact on low birth weight, but no significant effect on preterm birth weight or risk of infant death within one year of birth. However, the study did find a significant impact on preterm births to Hispanic women (Arima et al. 2009).

An additional two studies examined the effect of progesterone 17P on preterm births. Both studies found 17P to reduce the number of preterm deliveries for women who had a history of preterm births, though the studies were small with limited generalizability. One study included 193 births from six state Medicaid managed care programs (Mason et al. 2010), and another included women from one insurance company's Medicaid managed care programs (Lucas et al. 2012). The Lucas study found

recurrent preterm births to be significantly higher among women who discontinued 17P before 34 weeks, and that NICU/SCN admission rates were higher for their infants than those who completed the prophylaxis. They also found benefit of initiating 17P outside the recommended timeframe of 16–20.9 weeks (Lucas et al. 2012).

Highlight 4: Prenatal Case Management: The Effects on Birth Weight

Lack of access to prenatal care is the major barrier for improving adverse pregnancy outcomes. In the 1980s, the Institute of Medicine released two reports that clearly identified financing as the most important barrier to prenatal care. As a result, Congress expanded access to prenatal care through state Medicaid programs from 1986 to 1990. By 2003, more than 40 percent of births in the United States were to mothers who received their prenatal care benefits under Medicaid; currently over 70 percent of Medicaid beneficiaries are enrolled in managed care programs that offer prenatal care management as a benefit. Centene Corporation, a Medicaid managed care organization (MCO), provides care to over 1.5 million members in 10 states. Centene's prenatal care program, Start Smart for Your Baby (Start Smart), incorporates elements of case management, care coordination, and disease management to improve the health of mothers and their newborns. An essential component of the program is the notification of pregnancy (NOP) process, which identifies pregnant women and their risk factors as early in pregnancy as possible and establishes a relationship between members, a primary care provider, and health plan staff. Receipt of an NOP screening assessment automatically enrolls a pregnant member into the Start Smart program. Members are assigned a risk score, which determines the course and intensity of obstetrical care. An evaluation of the NOP notification and Start Smart program demonstrates that participation in a managed Medicaid prenatal program improves birth outcomes; the incidence of low birth weight infants was significantly lower in the NOP group compared to the non-NOP group. For low birth weight deliveries under 2,500 grams, the NOP participants were 7.9 percent less likely to have an adverse outcome compared to the non-NOP group. For low birth weight deliveries under 1,000 grams, the NOP effect is highly significant. Participants in the NOP program had a 31.2 percent lower likelihood of adverse event delivery.

Implications: Providing targeted care coordination for high-risk women reduces the risk of adverse pregnancy outcomes. This is particularly true in the lowest birth weight categories (< 1,000 grams). Critical to the success of the pregnancy management program was the procurement of accurate notification of pregnancy information, and enrolling pregnant mothers directly into Start Smart. States and Medicaid managed care programs that have worked collaboratively to develop policies and systems to promote quality, access and efficiency may have the most success in improving birth outcomes.

Source: Mason et al. (2011).

Diet and exercise

Three studies examined health or cost outcomes associated with diet and exercise interventions to prevent obesity, hypertension and diabetes, with results varying by intervention. In terms of the potential for cost savings, one study estimated that reducing diabetes and hypertension by 5 percent through diet, exercise, and reduced smoking would save approximately \$9 billion per year in the short term, with much of the savings going to public payers (Ormond et al. 2011).

Three articles summarized the results of interventions within single organizations with different results. One study of overweight or obese adults in one managed care program found that those who received

medical nutrition therapy were twice as likely to significantly reduce their weight and to exercise after the program than those who did not. The cost of the program was only \$.03 per-member per-month (D. W. Bradley et al. 2013). Another study evaluated the use of Weight Watchers by obese and overweight TennCare recipients and demonstrated that participation resulted in significant weight loss, with 20 percent of participating TennCare beneficiaries losing a statistically significant amount of weight (see highlight 5)(Mitchell et al. 2013). Participants who attended more meetings lost more weight. Another study looked at a modification of a diabetes prevention program provided by home care nurses modified for public housing residents at risk for type-2 diabetes. Compared to the control group who received enhanced standard care, the intervention group did not have any significant difference in clinical, behavioral, or psychosocial outcomes. However, both groups achieved significant improvements in diet, exercise, triglycerides, and psychosocial outcomes. It was noted that there was less than optimal attendance in the classes and groups provided as part of the diabetes prevention program (Whittemore et al. 2013).

Highlight 5: Using Weight Watchers to Manage Obesity

Over 35 percent of the US adult population is obese and another 33 percent are overweight, with ethnic minorities and people of low socioeconomic status (SES) disproportionately affected. There is some evidence that low-SES populations may have less access to structured weight loss interventions, and may also face challenges attending such sessions because of child care and transportation issues. Weight Watchers (WW) is the first commercial weight loss program to demonstrate effectiveness in a randomized controlled trial. Individuals who participated in WW lost 4.3 kg after one year, and maintained a weight loss of 2.9 kg after two years. In 2006, Tennessee's Medicaid managed care program, TennCare, and the three WW franchises that cover all of Tennessee formed the TennCare Weight Watchers partnership. Each WW franchise signed a provider agreement with each TennCare MCO to provide services to TennCare enrollees. The program allowed overweight and obese TennCare recipients to attend any ongoing WW meetings. Beneficiaries 21 and older were asked to pay a \$1 co-pay. Beneficiaries who attended at least 10 of the 12-week sessions were allowed to sign up for an additional 12-week session. Twenty percent of participants lost a clinically significant amount of weight during the study period, with those attending more meetings losing more weight. Thirteen percent of participants attended only two meetings, and lost 0.5 percent of their initial body weight. Participants who attended 13 or more meetings lost 6.4 percent of their initial weight.

Implications: While this study had a limited follow-up period—weight is often regained after six months of lifestyle interventions—partnering with a well-established program like Weight Watchers might be an effective way for Medicaid to provide weight loss and maintenance support to beneficiaries. Understanding strategies to encourage participation in structured weight loss programs, especially over longer periods of time, may produce a significant health benefit for this population.

Source: Mitchell et al. (2013).

Colorectal cancer screening

Finally, two studies looked at health outcomes associated with colorectal cancer screening. They found that screening decreased the risk of death from colorectal cancer, and also decreased the incidence of late stage diagnosis of colorectal cancer. One retrospective case-control study of Medicare beneficiaries ages 70–89 who died of any cause between 1998 and 2002 found that colonoscopy was associated with reduced risk of death from colorectal cancer (Baxter et al. 2012). Another study of Michigan Medicare

beneficiaries diagnosed with colorectal cancer found that those dually eligible for Medicaid were more likely to receive a late stage diagnosis and also received less colorectal screening (Carcaise-Edinboro, Bradley, and Dahman 2009).

Implications

Evidence from the articles reviewed suggest that in several cases, less frequent, more targeted screening is more cost-effective. Recent studies also highlight opportunities to improve health and reduce health care costs by promoting diet and exercise, prenatal care, colorectal cancer screening, and substance abuse treatment. Particularly in the case of substance abuse treatment and tobacco cessation, more intensive interventions may be cost-effective given the potential to avoid adverse health outcomes. Prevention of obesity and related chronic conditions through diet and exercise also has the potential to achieve substantial cost savings. Despite the potential health and cost benefits, a number of barriers remain to the use of these preventive services, as described in earlier sections of this report. However, these potential benefits provide further evidence that efforts to promote use of these preventive services are worthwhile.

V. Conclusions

The Affordable Care Act provides new opportunities for adult Medicaid and CHIP beneficiaries to access preventive services that they previously had not been able to. However, the literature identified through this environmental scan suggests a number of additional barriers may exist to the use of preventive services among this population. Ultimately, it remains unclear the effect that these services will have on health and cost outcomes.

Literature around the utilization of health services suggests the increase in coverage for preventive services will likely be accompanied by an increase in the use of preventive services. It also suggests there may be barriers among specific sub-populations to using preventive services even where coverage exists.

The literature provided a wide range of activities that may help promote utilization of preventive services by targeting states and MCOs, providers, and patients. Table 6 displays a summary of example activities or opportunities for activities at the various levels.

While the literature around the use of preventive services among Medicaid and CHIP populations provided a number of examples that can inform efforts to promote services among these populations, a number of gaps exist. Besides the demonstrable link between insurance coverage and use of preventive services, there remains lack of a strong evidence base for additional specific activities to promote preventive services. It appears it may be more challenging to increase utilization rates for certain preventive services such as colorectal cancer screening through state activities than for other services such as mammography or smoking cessation. Although some evidence suggests that interventions with components targeting both patients and providers is more effective than either of these on their own, additional research is needed on what types of activities are most effective for specific services.

Table 6. Examples of Activities to Promote Preventive Services Targeted at Various Actors

States and MCOs
<ul style="list-style-type: none">• Clarification on the definition of specific preventive services• Clarification of instances where no cost-sharing should occur• Resources for managed care organizations to help address barriers that exist among their participating practices and beneficiaries
Providers
<ul style="list-style-type: none">• Education and outreach targeted at nurses to perform screenings• Education and outreach targeted at physicians around covered preventive services• Pairing of patient- and practice-level interventions• Use of provider reminders and alerts around specific preventive services for eligible or high-risk patients• Increased emphasis on preventive services in patient-centered medical homes• Payment incentives such as coverage for services and billing codes
Patients
<ul style="list-style-type: none">• Insurance coverage for preventive services and minimal cost-sharing• Incentives to encourage healthy behaviors• Physician recommendations for preventive services• Motivational interviewing• Telephone or mail reminders or decision aids around specific preventive services• Targeted outreach for specific racial or ethnic groups• Tailoring of educational materials for low literacy

Among the literature in the past five years, articles on cost and health outcomes suggest opportunities to improve health through the promotion of lifestyle changes such as smoking cessation, diet, and exercise. The literature also suggests that as efforts increase to promote preventive screenings, the intensity and frequency of certain screenings may have an influence on the ultimate cost-effectiveness.

One limitation of this environmental scan is that articles were retrieved from the five-year period before many of the ACA provisions went into effect on January 1, 2014. In addition, the Affordable Care Act was passed in the midst of this period, which included many other provisions aimed at improving health care quality not discussed in this report but that may have had some effect on preventive services. While many of the lessons and examples from the literature still apply, a number of additional changes occurring in the US health care system may have influenced the findings in these studies other than the specifically studied activities to increase the use of preventive services, particularly as many of the studies used nonexperimental designs.

Finally, although there have been projections, it remains largely unknown how the new Medicaid population brought in under state expansions will differ from traditional populations. As such, it is unclear how relevant previously identified facilitators and barriers to the use of preventive services among traditional Medicaid populations found in this environmental scan will be going forward.

Appendices

Appendix A: Keywords and MeSH terms used in initial search

Concept	Keywords (title/abstract)	MeSH terms	EBSCO terms (CINAHL, Academic Premier, PsycInfo)
<p>1. Preventive services</p> <p>Specific preventive services recommended by USPSTF or required by CMS Core measures</p> <p>NB: USPSTF terms will be searched with AND (screening or counseling or preventive medication) to avoid retrieving large numbers of sources about medical conditions (e.g., hypertension) that do not discuss preventive issue</p>	<p>clinical preventive services, preventive health services, preventive care, primary care intervention, screening, immunization, section 4106, Medicaid expansion, access to care, core measures, prevention, well-child visits, preventive counseling, EPSDT, CHIPRA quality demonstration, health education</p> <p>Note: USPSTF inactive recommendations were excluded</p> <p>USPSTF Child/Adolescent: Cervical Cancer (Pap Smear), Skin Cancer, Testicular Cancer, Hypertension in Children and Adolescents, Lipid Disorders in Children (Cholesterol Abnormalities, Dyslipidemia), Autism Spectrum Disorder in Young Children, Speech and Language Delay, Chlamydial Infection, Gonococcal Ophthalmia Neonatorum, "Herpes Simplex, Genital," Human Immunodeficiency Virus (HIV) Infection, Sexually Transmitted Infections, Child Maltreatment, Motor Vehicle Occupant Restraints, Alcohol Misuse, Depression in Children and Adolescents, "Drug Use, Illicit," Drug Use in Children, Illicit or Nonmedical, Smoking (Tobacco Use), Suicide Risk, Dental Caries in Preschool Children, Hyperbilirubinemia in Infants, Iron Deficiency Anemia (Anemia), Lead Levels in Childhood and Pregnancy, Obesity in Children and Adolescents, Hip Developmental Dysphasia, Idiopathic Scoliosis in Adolescents, "Hypothyroidism, Congenital," Phenylketonuria, Sickle Cell Disease, "Hearing Loss, Newborn," Visual Impairment in Children Ages 1–5</p> <p>USPSTF Adult: Aspirin/NSAIDs for Prevention of Colorectal Cancer , Bladder Cancer, Breast Cancer BRCA Testing (Ovarian Cancer, Breast Cancer, Cervical</p>	<p>preventive health services (term explodes to include early intervention, health education, immunization, primary prevention, health promotion, etc.), child health services, delivery of health care/organization and administration</p>	<p>Medical screening, preventive health services, primary health care, preventive medicine, health promotion</p>

Concept	Keywords (title/abstract)	MeSH terms	EBSCO terms (CINAHL, Academic Premier, PsycInfo)
<p>The Core Measures are specific measure names and will be phrase-searched as given</p>	<p>Cancer, Colorectal Cancer, Lung Cancer, Oral Cancer, Ovarian Cancer, Pancreatic Cancer, Prostate Cancer, Skin Cancer, Testicular Cancer, Thyroid Cancer, Tobacco Cessation (Smoking), Vitamin Supplementation to Prevent Cancer and Coronary Heart Disease, Abdominal Aortic Aneurysm, Additional Risk Factors for Intermediate CHD Risk, Aspirin for Primary Prevention of Cardiovascular Disease, Blood Pressure in Adults (Hypertension), Carotid Artery Stenosis, Coronary Heart Disease, Lipid Disorders in Adults (Cholesterol Abnormalities, Dyslipidemia), Peripheral Artery Disease and Cardiovascular Risk Assessment, Tobacco Cessation (Smoking), Bacteriuria, Chlamydial Infection, Gonorrhea, Hepatitis B Virus Infection, Hepatitis B Virus Infection (Pregnant Women), Hepatitis C Virus Infection, Herpes Simplex Genital, Human Immunodeficiency Virus (HIV) Infection, Rubella, Sexually Transmitted Infections, Syphilis, Tuberculosis Infection, Falls Prevention in Older Adults, Family Violence, Intimate Partner Violence and Elderly Abuse, Motor Vehicle Occupant Restraints, Alcohol Misuse, Dementia (Alzheimer's Disease), Depression Adult, Drug Use Illicit, Tobacco Cessation (Smoking), Diabetes Mellitus, Healthy Diet and Physical Activity to Prevent Cardiovascular Disease, Hemochromatosis, Iron Deficiency Anemia (Anemia), Menopausal Hormone Therapy, Nutrition (Diet), Obesity in Adults, Thyroid Disease, Vitamin D and Calcium Supplementation to Prevent Fractures, Vitamin D Deficiency, Back Pain Low (Low Back Pain), Osteoporosis, Aspirin Prophylaxis in Pregnancy, Bacterial Vaginosis in Pregnancy, Breastfeeding, Down Syndrome, Folic Acid Supplementation, Gestational Diabetes, Preeclampsia, Rh Incompatibility, Rubella, Glaucoma, Hearing Loss, Older Adults, Impaired Visual Acuity in Older Adults, Visual</p>		

Concept	Keywords (title/abstract)	MeSH terms	EBSCO terms (CINAHL, Academic Premier, PsycInfo)
	<p>Acuity in Older Adults Impaired, Chronic Obstructive Pulmonary Disease, Kidney Disease (Chronic)</p> <p>CMS Core Measures, Adult: use of imaging studies for low back pain, screening for clinical depression and follow-up plan, documentation of current medication in the medical record, body mass index (BMI) screening and follow-up, closing the referral loop receipt of specialist report, functional status assessment for complex chronic conditions</p> <p>Core Measures, Child: appropriate testing for children with pharyngitis, weight assessment and counseling for nutrition and physical activity for children and adolescents, chlamydia screening for women, use of appropriate medications for asthma, childhood immunization status, appropriate treatment for children with upper respiratory infection (URI)</p>		
2. Insurance	insurance, health coverage, Medicaid, children's health insurance programs, CHIP	Medicaid, insurance coverage, "insurance, health" (term explodes to include many relevant subterms such as health benefit plans, managed care programs, prepaid health plans, etc.), state health plans	"Insurance, health", health insurance, state children's health insurance program (US), insurance coverage, Medicaid
3. Population*	N/A	Adult (19+) or Child (ages 0–19) applied as a search limit (these limiters explode to include all sublimits)	Adult/Child/Adolescent applied as a search limit when possible; not all of the included databases use this limiter

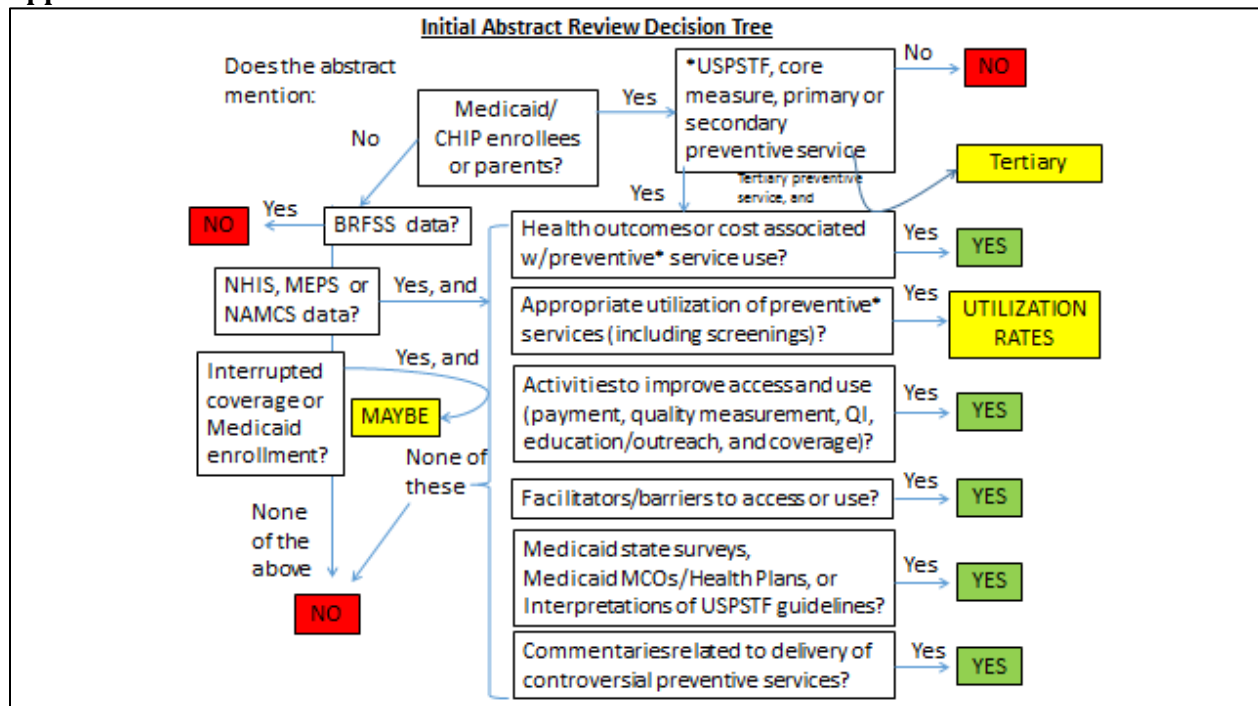
Strategy: Concept terms will be searched with OR to create large sets of related items. The concepts will be combined with AND.

* Did not apply these at the search level, as there was a desire to include nonempirical articles, which would not have these designations.

Appendix B: Inclusion/Exclusion Criteria for Abstract Review

Inclusion	Exclusion
From Search Strategy document	
<ul style="list-style-type: none"> • 5 years • English • Human subjects only • United States • Empirical studies and research reports (prioritizing literature reviews) • <i>Ebsco only</i>: scholarly (peer-reviewed) journals, exclude Medline (PubMed) records 	<ul style="list-style-type: none"> • No abstract provided • Presentations • Conference proceedings • Conceptual and theoretical papers (unless they appear extremely relevant/helpful) • Opinion, commentary that is not substantive
Outcomes	
<ul style="list-style-type: none"> • Literature review articles that examine research around health outcomes or cost outcomes associated with preventive health services use • Recent studies not captured in existing reviews if they provide new information 	<ul style="list-style-type: none"> • Individual studies around outcomes from specific preventive services captured in existing reviews
Utilization	
<ul style="list-style-type: none"> • Latest numbers for Medicaid/CHIP and private health insurance (year will differ depending on data source—claims, survey, etc.) • Articles on effect of coverage on utilization (priority given to review articles) 	
Activities (e.g., enhanced FMAP, quality measurement/reporting, payment, quality improvement, education/outreach, coverage, etc.)	
<ul style="list-style-type: none"> • Literature reviews and individual articles • Articles on state participation in CMS initiatives targeting state Medicaid/CHIP, including enhanced FMAP and quality measurement/reporting • Articles on activities conducted by state Medicaid/CHIP agencies (and Medicaid MCOs) targeting delivery systems or patients, aimed at increasing preventive service access/utilization • Articles on facilitators or barriers to the use of preventive services by Medicaid/CHIP populations • Commentary with relevant information on issues that may affect implementation of state activities 	<ul style="list-style-type: none"> • Articles on activities not relevant to state Medicaid/CHIP agencies (e.g., employers, Medicare, etc.) • Articles not primarily focused on Medicaid/CHIP patients • Articles not focused on preventive services (e.g. non-prevention-focused quality measures) • Commentary on politics around the Affordable Care Act

Appendix C: Decision Tree

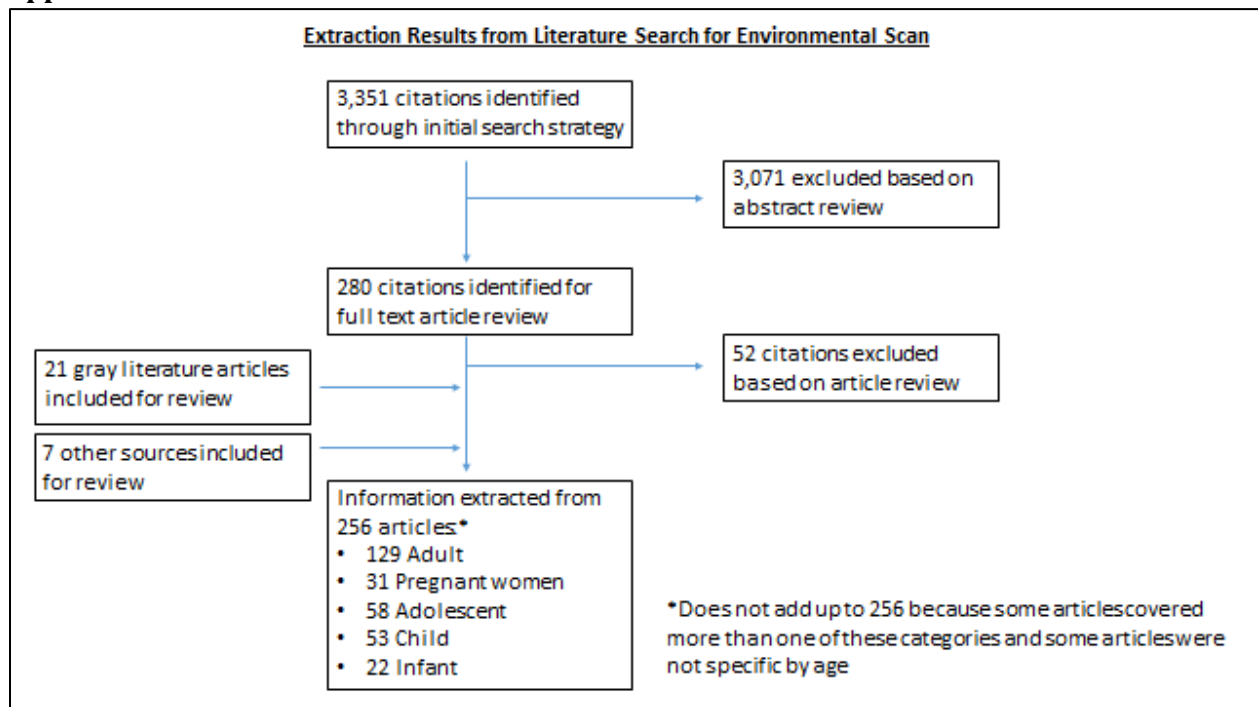


Appendix D: Websites Reviewed (Gray Literature Search)

Organization

American Cancer Society
 American Health Care Quality Association
 Centers for Disease Control and Prevention
 Commonwealth Fund
 Institute for Healthcare Improvement
 Kaiser Family Foundation
 March of Dimes
 Medicaid.gov
 National Association of Medicaid Directors
 Office of the Surgeon General
 Public Health Institute
 Robert Wood Johnson Foundation
 Urban Institute

Appendix E: Extraction Results



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