U.S. Preventive Services Task Force Approach to Child Cognitive and Behavioral Health

Alex R. Kemper, MD, MPH, MS,[1] Iris R. Mabry-Hernandez, MD, MPH,[2] David C. Grossman, MD, MPH[3]

An important component of routine preventive care for children is the monitoring of growth and development. Although cognitive, affective, and behavioral health problems are commonly encountered in pediatric primary care, there is debate around issues related to early detection of significant problems of this type, including the accuracy of screening and the benefits and harms of early diagnosis and treatment. The U.S. Preventive Services Task Force makes recommendations regarding clinical preventive services for primary care clinicians based on the best available scientific evidence. The Task Force has found important gaps related to the validity of commonly used screening tools and significant gaps related to the evidence regarding early treatment. This review describes the meaning of the grades used by the Task Force, how these grades are determined, and the grades assigned to childhood cognitive, affective, and behavioral health recommendations. The review summarizes common themes in the evidence gaps and the future research necessary to advance the field and improve child health outcomes.

Introduction

In the U.S., pediatric preventive care is generally delivered through a series of preventive healthcare visits. There are now 31 recommended visits from the newborn period through age 21 years.[1] The frequency and spacing of visits allow for a wide array of specifically timed preventive services, including screening, counseling, and anticipatory guidance. In addition, the repeated visits allow healthcare providers to monitor growth and development over time, a process referred to as surveillance. Clinical preventive services can improve health outcomes during childhood and adolescence and have a lifelong impact. Weighing the benefits and harms of preventive services can be challenging because of a lack of data from research trials and the difficulty in assessing health benefits, especially long-term, in children and adolescents.

The goals of this review are to provide a brief overview of the U.S. Preventive Services Task Force (USPSTF) recommendation process; to summarize the USPSTF recommendations related to cognitive, affective, and behavioral health; and to define opportunities for addressing the significant gaps identified by the USPSTF related to screening for these conditions.

Overview of the U.S. Preventive Services Task Force

The USPSTF is a 16-member panel of non-federal experts in primary care and evidence-based medicine. Members are appointed by the director of the U.S. Agency for Healthcare Research and Quality and each member serves a 4-year term. The USPSTF makes recommendations regarding preventive care, including screening tests, counseling, and preventive medications. To be considered, the preventive care services must be offered in primary care settings or be preventive care services that would typically be initiated in the primary care setting with follow-up by other healthcare providers. The USPSTF makes recommendations regarding preventive care services provided to asymptomatic individuals, not those who already have signs or symptoms of a condition.

From the [1]Duke Clinical Research Institute and Department of Pediatrics, Durham, North Carolina; [2]Center for Evidence and Practice Improvement, Agency for Healthcare Research and Quality, Rockville, Maryland; and [3]Group Health Research Institute, Seattle, Washington

Address correspondence to: Alex R. Kemper, MD, MPH, MS, Department of Pediatrics, 2400 Pratt Street, Room 0311 Terrace Level, Durham NC 27705. E-mail: alex.kemper@duke.edu.

This article is part of the supplement issue titled Realizing Population-Level Improvements for All Children's Cognitive, Affective, and Behavioral Health.

0749-3797/$36.00

http://dx.doi.org/10.1016/j.amepre.2016.05.016

The USPSTF recognizes that there are important opportunities for providing preventive care services outside of primary care, especially in community settings. The Community Preventive Services Task Force was established in 1996 as an independent body supported by the Centers for Disease Control and Prevention to provide recommendations for use in community-based settings, including schools (www.thecommunityguide.org).[2] The Community Preventive Services Task Force addresses a broad array of topics related to behavioral counseling for children and adolescents, including interventions to reduce sexual risk behaviors, increase motor vehicle safety, and reduce alcohol and tobacco use. Although there are some differences in the methods used by the two Task Forces, each has an overall goal of improving health through prevention. The key difference is related to the settings in which the preventive services are delivered.

The USPSTF bases its recommendations on systematic evidence reviews using a well-defined and transparent process.[3] The USPSTF does not conduct research. However, critical research gaps identified by the USPSTF are summarized in the recommendation statements and in its annual report to the U.S. Congress each year.

The USPSTF makes recommendations based on the certainty of net benefit for the patient resulting from a specific preventive care service. Net benefit reflects the expectation of the degree to which benefits exceed harms from implementation of the service in the primary care setting and is classified as substantial, moderate, small, or zero/negative. Certainty reflects the overall evidence regarding the net benefit. High certainty results from consistent results from high-quality studies in primary care settings with a study population reflective of the target of the preventive care service. Moderate certainty implies that the evidence is sufficient to evaluate the preventive care service, but the confidence in the estimates is such that future research could change the magnitude or direction of the assessment. Low certainty is assigned when the evidence is insufficient to evaluate the preventive care service. Insufficiency results from the identification of few high-quality studies or of heterogeneous findings.

For pediatric services, the USPSTF often does not identify direct evidence related to the delivery of a specific preventive service and consequent health outcomes. Such direct evidence could come from a randomized trial of screening with sufficiently long follow-up to ascertain differences in patient outcomes. In the absence of direct evidence, the USPSTF considers key questions related to the performance characteristics of the preventive service, the relationship of the preventive service to intermediate or proxy outcomes, the relationship between intermediate or proxy outcomes and long-term health outcomes, and harms associated with delivery of the preventive service or health care that might be delivered as a direct result of the preventive service and treatment. The USPSTF does not consider costs or coverage when developing recommendations.[4]

It is important to recognize that when evaluating the net benefit of screening, the focus is on long-term outcomes for those low-risk or average-risk individuals identified specifically through screening. However, most treatment studies focus on outcomes from more–severely affected children than those expected to be found only through screening.

To simplify communication about USPSTF recommendations, a letter grade system is used to briefly communicate findings, as follows[5]:

A. The USPSTF recommends the service. There is a high certainty that the net benefit is substantial.
B. The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.
C. The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.
D. The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.
E. The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

The C grade is often confused with the I statement. The C grade indicates that there may be a small benefit and that the delivery of the preventive service should be based on the results of an informed discussion between the patient or family and the healthcare provider. By contrast, the I statement is made when there is not sufficient evidence to make a specific graded recommendation.

All final USPSTF recommendation statements include a description of the rationale for the preventive service and the USPSTF's assessment of the evidence and a section describing the clinical considerations related to the preventive service. Primary care providers should read these statements before modifying the preventive services that they provide. In addition, the final evidence reviews are available for those interested in a more complete understanding of the evidence.

Under the Affordable Care Act, preventive care services with an A or B recommendation are to be covered without cost sharing by non-grandfathered contracts offered by group health plans and by health insurance plans offered in the individual or group market purchased before the Affordable Care Act became law (March 23, 2010). As previously described, the USPSTF does not consider issues related to cost or coverage in developing recommendations. Although the USPSTF does not specifically advocate for coverage of preventive services, it recognizes the importance of insurance coverage in providing access to services and therefore also recognizes the importance of insurance coverage for a wider array of preventive services, such as those for which the balance of benefit and harm is more closely balanced (i.e., C recommendations) or for those preventive services for which there is insufficient evidence to assess the overall net benefit (i.e., I statements). A and B recommended services should be considered the "floor" of preventive care delivery, not the "ceiling."[4]

The general approach to developing a recommendation is to begin with developing a research plan, including an analytic framework and list of key questions. After a period of public comment, the research plan is finalized and a draft evidence report is developed by one of the U.S. Agency for Healthcare Research and Quality–funded evidence-based practice centers. The draft evidence review is evaluated and revised based on input from the USPSTF and then a draft recommendation statement is produced. The revised evidence review and draft recommendation statement is then made available for public comment. The evidence review and recommendation statement are then further revised, finalized, and disseminated. To make sure a full range of public comments are received, the USPSTF distributes requests for public comments to recognized experts and professional and other advocacy organizations. In addition, calls for public comment are advertised on the USPSTF website (www.uspreventiveservicestaskforce.org/Page/Name/us-preventive-services-task-force-opportunities-for-public-comment).

Addressing the Research Gaps

I statements should not be viewed as expressions that a preventive service should not be done, only that there is insufficient evidence using the USPSTF methods to evaluate the net benefit of the preventive service. Most of these gaps are related to uncertainty regarding treatment outcomes for those identified specifically through screening. The reason for these gaps is understandable. Scientific attention is usually first put toward developing effective treatment for the most severely affected individuals. Later work often then focuses on the development of tools for early intervention. Enthusiasm about adoption can lead to gaps regarding the comparative benefits of early intervention. There are several strategies to address this if adoption of screening has already been adopted. Randomized trials of screening can provide a high level of evidence, but can be challenging to do if the preventive service is already considered to be the standard of care. However, trials in other communities, including countries similar to the U.S., are often still feasible. Such trials can be expensive and take a long time before results are available. Comparing the prevalence of the targeted condition across different communities that vary in whether screening is offered can be informative. However, such studies can be biased based on the degree to which case ascertainment is systematically done. Large, population-based retrospective studies can fill in the gap when it is clear who was screened and when the outcomes are systematically captured. The move to electronic medical records facilitates this work, and the ability to link records across health systems is likely to be fundamental to these efforts. To help encourage research, the USPSTF began in 2011 to present an annual report to Congress that highlights important knowledge gaps. The fourth annual report focused on children and adolescents (www.uspreventiveservicestaskforce.org/Page/Name/reports-to-congress).

U.S. Preventive Services Task Force Recommendations Regarding Childhood Cognitive, Affective, and Behavioral Health

The following is a description of current USPSTF recommendations in the domain of childhood cognitive, affective, and behavioral health. All current recommendations are available on the USPSTF website (www.uspreventiveservicestaskforce.org).

Alcohol Misuse

In 2013, the USPSTF issued an I statement regarding screening and behavioral counseling interventions to reduce alcohol misuse among adolescents aged 12–17 years.[6] By contrast, a B recommendation was given for those aged $\geq$18 years owing to evidence showing that brief behavioral counseling interventions in adults reduced risky or hazardous drinking. The USPSTF did not identify high-quality studies that addressed screening and behavioral counseling interventions for alcohol misuse in adolescents, a critical gap related to the effectiveness of interventions delivered in the primary care setting.

Autism Spectrum Disorder

In 2016, the USPSTF issued an I statement regarding screening for autism spectrum disorder in young children.[7] There is a critical gap in evidence regarding treatment outcomes of children aged <3 years identified through screening. The USPSTF found limited evidence on the potential benefits of screening for autism spectrum disorder in this group of asymptomatic young children. Most studies focused on the benefits of treating older children who had been identified by concerned parents, teachers, or caregivers; these children are likely to have more severe autism than those who would be identified through screening. The USPSTF also found little evidence about the potential harms of screening young children for autism spectrum disorder. However, the potential harms of screening and treating children identified through screening are likely to be low.

At the time of release of the statement, published commentaries by experts in the field acknowledged the limitations of data regarding outcomes of those children identified through screening only but also highlighted the significant challenges in systematically determining the benefit of early intervention resulting directly from screening.[8–11] Two of these commentaries[8,11] also expressed concerns about how the I statement would be interpreted, and this could delay identification and treatment but exacerbate disparities in outcomes. The USPSTF would like to underscore that the I statement is not a call against screening but is a call for more research. The USPSTF also recognizes that other groups using different methods to guideline development, including Bright Futures, recommends autism screening. Under the Affordable Care Act, Bright Futures recommendations are also covered preventive services.

Depression

In 2016, the USPSTF issued an I statement for screening for major depressive disorder among children aged 7–11 years and a B recommendation for children aged 12–18 years when systems are in place to ensure accurate diagnosis, psychotherapy, and follow-up.[12] Little is known about the accuracy of screening tests in children aged <12 years. Little is also known about the benefit of detecting depression in young children through screening or the magnitude of benefit for those young children identified through screening. By contrast, there is adequate evidence that screening can identify adolescents with depression. The USPSTF also found adequate evidence that treatment of adolescents with screen-detected depression is associated with a beneficial reduction in symptoms. For all children and adolescents, there is concern about harms, including suicidal events and suicidal ideation, related to the use of pharmacotherapy. However, the magnitude of these potential harms is small with appropriate monitoring.

The USPSTF also issued a B statement for maternal depression screening in adults, which includes screening for maternal depression.[13] In addition to improving outcomes for the mother, reducing maternal depression could have important benefits for the infant.

Illicit Drug Use

In 2014, the USPSTF issued an I statement about the use of behavioral interventions to prevent or reduce illicit drug use among children and adolescents.[14] There is a critical evidence gap resulting from the limited and inconsistent evidence available on the effectiveness of interventions used in primary care settings or available through referral by primary care providers. Little is also known about the tools to identify those at risk or already engaging in illicit drug use.

Speech and Language Delay and Disorders in Preschool-Aged Children

In 2015, the USPSTF issued an I statement regarding screening for speech and language delay and disorders in children aged ≤5 years.[15] The USPSTF identified critical evidence gaps related to the performance of available screening instruments and the effectiveness of early intervention. Most studies were based on individuals who were clinically identified instead of asymptomatic children identified through screening, and the treatment studies had large loss to follow-up rates.

Suicide Risk

In 2014, the USPSTF issued an I statement regarding screening for suicide risk in adolescents.[16] Critical evidence gaps included inadequate evidence on the accuracy of screening tests, the effectiveness of treatment, and the harms of screening or treatment. The USPSTF also suggested evaluating the effectiveness of linking primary care to community resources to provide services for those at risk of suicide as an area of research.

Tobacco Use in Children and Adolescents

In 2013, the USPSTF issued a B recommendation for providing education and counseling to prevent the initiation of tobacco use.[17] Although the USPSTF found adequate evidence that behavioral counseling interventions can reduce the risk of smoking initiation in school-aged children and adolescents, it also recognized the future opportunity to assess the effectiveness of referral to computer-based interventions that could be tailored to

the patient's need for prevention of uptake or cessation of tobacco use.

Summary and Implications

The USPSTF has evaluated only a subset of the possible preventive services available for children and adolescents related to cognitive, affective, and behavioral health, and for many of those that were evaluated, the USPSTF found insufficient evidence to make a specific recommendation. The common gaps in evidence include lack of information about screening accuracy and inadequate evidence about the effectiveness of intervention for asymptomatic individuals identified through screening in the primary care setting. Trials of screening and other preventive services are less common for children than adults. The authors hope that identification of these gaps encourages clinicians and researchers to work together to improve the quantity and quality of the evidence base in these key areas. This is not simply an academic exercise. It is imperative that we not only understand but also continually improve the effectiveness of our preventive care services.

Publication of this article was supported by Members of the Forum on Promoting Children's Cognitive, Affective, and Behavioral Health.

Alex Kemper and David Grossman are members of the U.S. Preventive Services Task Force (USPSTF). This article does not necessarily represent the views and policies of the USPSTF.

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No financial disclosures were reported by the authors of this paper.

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