June 4, 2021

IMPORTANT NOTE TO PROVIDER

This letter is transmitted to all contracted provider offices per Health Plan's recommendation to provide Primary Care Providers with information and training on Autism Spectrum Disorder screening for ages 18 months to 2 years old as recommended per AAP and Bright Futures.

A. INFORMATION ON AUTISM SPECTRUM DISORDER IDENTIFICATION, SCREENING & MANAGEMENT

Given the prevalence of autism spectrum disorder (ASD), all pediatric primary care providers should be prepared to care for children and youth with ASD. The AAP recommends that all children be screened for ASD at ages 18 and 24 months, along with regular developmental surveillance. As the leading pediatric health organization in the United States, the American Academy of Pediatrics is uniquely positioned to provide support and evidence-based guidelines to pediatricians caring for children and youth with ASD.

The AAP recommends that all children be screened for ASD at ages 18 and 24 months, along with regular developmental surveillance. Toddlers and children should be referred for diagnostic evaluation when increased risk for developmental disorders (including ASD) is identified through screening and/or surveillance. Children should be referred for intervention for all identified developmental delays at the time of identification and not wait for an ASD diagnostic evaluation to take place.

Standardized screening for ASD at 18 and 24 months of age with ongoing developmental surveillance continues to be recommended in primary care (although it may be performed in other settings), because ASD is common, can be diagnosed as young as 18 months of age, and has evidenced-based interventions that may improve function. More accurate and culturally sensitive screening approaches are needed. Primary care providers should be familiar with the diagnostic criteria for ASD, appropriate etiologic evaluation, and co-occurring medical and behavioral conditions (such as disorders of sleep and feeding, gastrointestinal tract symptoms, obesity, seizures, attention-deficit/hyperactivity disorder, anxiety, and wandering) that affect the child's function and quality of life. There is an increasing evidence base to support behavioral and other interventions to address specific skills and symptoms. Shared decision-making calls for collaboration with families in evaluation and choice of interventions.

Prevalence

The reported prevalence of children with ASD has increased over time, and primary care providers are often asked about the reasons for this increase. This increase may be attributable

to several factors, including broadening in the diagnostic criteria with ongoing revisions of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), the more inclusive definition of pervasive developmental disorder with the adoption of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) in 1994, increased public awareness of the disorder and its symptoms, recommendations for universal screening for ASD, and increased availability of early intervention and school-based services for children with ASD. In part, the increasing numbers of children with a diagnosis of ASD may reflect diagnostic substitution, the recognition of ASD in children previously primarily diagnosed with intellectual disability or a co-occurring genetic syndrome. A true increase in the prevalence of ASD associated with other biological risk factors is also possible.

Since 2007, efforts have been made to increase awareness of ASD symptoms, promote universal screening in primary care and advocate for community services. The reported prevalence of ASD has increased from one in 155 (2007) to one in 59 (2018). While most individuals with ASD are male, there may be different phenotype(s) in females accounting for this difference.

Children with average cognition, attention-deficit/hyperactivity disorder (ADHD) and underserved groups may be diagnosed later. About 40% of individuals with ASD also have intellectual disability.

Clinical Symptoms

Despite advances in understanding the neurobiology and genetics of ASD, the diagnosis of ASD continues to be based on identifying and reporting behaviorally defined clinical symptoms. In 2013, the DSM-5 consolidated the diagnosis of ASD into a single category and emphasized the importance of identifying coexisting developmental and behavioral disorders and symptoms. In the years since the 2007 AAP clinical reports on ASD, both professional education and public awareness have promoted recognition of symptoms that might lead to early identification of ASD, use of standardized screening approaches, and management of associated medical and behavioral features of ASD from infancy through adolescence.

Core Symptoms

Although symptoms of ASD are neurologically based, they manifest as behavioral characteristics that present differently depending on age, language level, and cognitive abilities.

Core symptoms cluster in 2 domains (social communication/interaction and restricted, repetitive patterns of behavior), as described in the DSM-5. Atypical development in several functional areas contribute to symptoms of ASD. Abnormalities in understanding the intent of others, diminished interactive eye contact, and atypical use and understanding of gesture presage atypical development of social communication and pretend play as well as interest in other children. Symptoms of ASD are further shaped by deficits in imitation and of processing information across sensory modalities, such as vision (gesture) and hearing (language). Repetitive behaviors and perseveration may be primary compulsions but may also be related to

atypical processing of sensory information or may reflect a desire to instill predictability when an individual does not understand the intent of others.

Approximately one-quarter of children with ASD will be reported to have a regression in language or social skills, most typically between 18 and 24 months of age.

Diagnostic Criteria: DSM-5

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) published in 2013 consolidated the category of pervasive developmental disorders (PDD) (autistic disorder, Asperger disorder, PDD-NOS [not otherwise specified] and disintegrative disorder) into a single diagnosis of ASD with modifiers (with intellectual disability). It also allowed diagnoses of co-occurring conditions like ADHD and anxiety.

DSM-5 describes levels of symptoms and support needs within two categories: impairment in social communication and restricted and repetitive behaviors.

The DSM has been central in establishing criteria for diagnosing mental and behavioral disorders.

Domains	**Criteria: Deficits**	**Examples**
A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history; must have all 3 symptoms in this domain	1. Social-emotional reciprocity	Abnormal social approach and failure of normal back-and-forth conversation; reduced sharing of interests, emotions, or affect; failure to initiate or respond to social interactions
	2. Nonverbal communicative behaviors used for social interaction	Poorly integrated verbal and nonverbal communication; abnormalities in eye contact and body language or deficits in understanding and use of gestures; total lack of facial expressions and nonverbal communication

	3. Developing, maintaining, and understanding relationships	Difficulties adjusting behavior to suit various social contexts; difficulties in sharing imaginative play or in making friends; absence of interest in peers
B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2 of the following, currently or by history; must have 2 of the 4 symptoms.	1. Stereotyped or repetitive motor movements, use of objects, or speech	Simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases
	2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior	Extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day
	3. Highly restricted, fixated interests that are abnormal in intensity or focus	Strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest
	4. Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment	Apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination

		with lights or movement

Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life). Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and ASD frequently co-occur; to make comorbid diagnoses of ASD and intellectual disability, social communication should be below that expected for the general developmental level. Specify whether: with or without accompanying intellectual impairment, language impairment or associated with a known medical or genetic condition or environmental factor. Add code 293.89 if catatonia is also present. Reprinted with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (copyright 2013). American Psychiatric Association. All Rights Reserved.

Early diagnosis, early intervention impact outcomes

The AAP continues to recommend routine developmental and ASD screening in toddlers. While ASD can be diagnosed when a child is younger than 2 years of age, the average age of diagnosis in the U.S. remains over 3 years of age.

Although screening tools are being developed and studied, the AAP does not endorse a specific tool.

Practices should track children at risk to ensure they have diagnostic evaluation(s) and indicated services throughout childhood, as some children may not be identified until school age.

Waits for diagnostic evaluations at specialty clinics often are long. When developmental concerns are identified, pediatricians should refer children to early intervention (0-3 years of age) or school services to initiate services. Early identification, diagnosis and referral to evidence-based interventions are associated with improved outcomes.

Interventions

Evidence supports the use of behavioral interventions (e.g., applied behavior analysis) for skill building. All states require insurance coverage of autism services. Combinations of developmental and behavioral approaches and inclusion of parent-mediated therapies have moved from research to community settings.

At school age, social skills should be addressed through pragmatic language therapy, teaching play and interaction with peers. Many students with ASD have challenges with executive functioning, ADHD or anxiety, impacting academic performance and requiring treatment. Behavioral approaches should be implemented prior to consideration of medication. Interventions targeting sensory symptoms of ASD are popular despite limited evidence.

Genetics and neurobiology

Research examining the genetics and neurobiology of ASD has progressed rapidly.

Many genes associated with brain development have been identified, and 30%-40% of individuals have findings on chromosomal microarray testing. Families should be counseled about the genetics of ASD and offered testing. Understanding of gene-environment interaction and research into potential immunologic factors that affect brain development are increasing.

Co-occurring medical conditions

Pediatricians often see young children with severe food selectivity and sleep problems who are later diagnosed with ASD.

Food refusal on the basis of texture, color, presentation or taste may be associated with sensory differences, anxiety or perseverative rigidity. Most children with ASD do not have nutritional deficiencies, but a dietary history should be included during health supervision. Obesity is more common. Constipation is common and may be associated with behavioral symptoms.

Problems with sleep onset and maintenance are frequent in children with ASD and should be addressed with behavioral management strategies. Melatonin may be helpful with sleep onset.

Wandering is a major cause of morbidity and mortality and should be addressed through anticipatory guidance throughout the lifespan.

While a routine electroencephalogram is not necessary, individuals with ASD are at increased risk for seizures.

Lifespan issues

Families should be supported to work on transitions to post-secondary education, work and adult health providers. Pediatricians should begin discussing transition needs in middle adolescence and have a process in their practices.

Collaboration with families and patients

While choices of intervention extend beyond the medical arena, the pediatric health care provider is a resource for information, referral and interpreting often-conflicting claims. Involving patients in shared decision-making allows the goals and values of the patient and family to help guide therapeutic choices. This leads to enhanced satisfaction with the care experience.

Medical aspects of ASD should be identified and managed in the medical home with referral to specialty care as needed.

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B. INFORMATION ON REGIONAL CENTER

Regional centers are nonprofit private corporations that contract with the Department of Developmental Services to provide or coordinate services and supports for individuals with developmental disabilities.

Who Is Eligible For Services?

To be eligible for services, a person must have a disability that begins before the person's 18th birthday, be expected to continue indefinitely and present a substantial disability as defined in *Section 4512* of the *California Welfare and Institutions Code*. Eligibility is established through diagnosis and assessment performed by regional centers.

Infants and toddlers (age 0 to 36 months) who are at risk of having developmental disabilities or who have a developmental delay may also qualify for services. The criteria for determining the eligibility of infants and toddlers is specified in *Section 95014* of the *California Government Code*. In addition, individuals at risk of having a child with a developmental disability may be eligible for genetic diagnosis, counseling and other prevention services.

DDS = Developmental Disability Service age 3 yearold thru adulthood. A developmental disability is defined as disability that occurs before the age of 18, is substantially disabling for an individual, and is expected to continue indefinitely.

ES = Early Start Program. Families whose infants or toddlers have a developmental delay or disability or an established risk condition with a high probability of resulting in a delay may be eligible to receive an "Early Start" in California.

Regional Center Diagnoses

- Autism
- Cerebral Palsy
- Developmental Delay
- Down Syndrome
- Difficulty in daily living skills: speaking, taking care of oneself, walking or working
- Epilepsy/Seizures
- Intellectual Disability
- Speech Delay under the age of 3 services through the Early Intervention/ Early Start Programs

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PRIMARY CARE PHYSICIAN (PCP) IS EXPECTED TO COLLABORATE AND COORDINATE WITH REGIONAL CENTER AND SPECIALISTS.

Primary Care Physician (PCP) is responsible in ensuring that each child under his/her care is receiving medically necessary covered diagnostic, preventive, treatment service and immunization (based on age). If the child is due for an annual physical examination, kindly schedule an appointment as soon as possible.

For children between 18 months and 2 years old, PCP has to initiate Autism Screening Disorder (ASD) screening along with regular developmental surveillance. Toddlers and children should be referred for diagnostic evaluation when increased risk for developmental disorders and ASD is identified through screening and/or surveillance. A documentation must be kept in the medical records file.

Per Health Plan guidelines, newly enrolled members must have initial health assessment (IHA) by their respective Primary Care Physician (PCP) within 120 days of enrollment.

To comply with Health Plan requirement, medical records received from Regional Center and specialists are expected to have been reviewed and signed by PCP. The PCP office must provide a copy of medical records to the IPA as required by the Health Plan. If requested, all medical records and other documentation related to the child's healthcare must be forwarded to Health Care LA, IPA via email at CCS_Referral@medpointmanagement.com or via fax at (818) 960-0164.

Please feel free to reach us if you have any questions.

Sincerely,

Health Care LA, IPA
CCS Department
Email: CCS_Referral@medpointmanagement.com

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®

Recommendations for Preventive Pediatric Health Care

Bright Futures/American Academy of Pediatrics

Bright Futures
prevention and health promotion for infants, children, adolescents, and their families™

Each child and family is unique; therefore, these Recommendations for Preventive Pediatric Health Care are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in a satisfactory fashion. Developmental, psychosocial, and chronic disease issues for children and adolescents may require frequent counseling and treatment visits separate from preventive care visits. Additional visits also may become necessary if circumstances suggest variations from normal.

These recommendations represent a consensus by the American Academy of Pediatrics (AAP) and Bright Futures. The AAP continues to emphasize the great importance of continuity of care in comprehensive health supervision and the need to avoid fragmentation of care.

Refer to the specific guidance by age as listed in the *Bright Futures Guidelines* (Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents.* 4th ed. American Academy of Pediatrics; 2017).

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

The Bright Futures/American Academy of Pediatrics Recommendations for Preventive Pediatric Health Care are updated annually.

	INFANCY								EARLY CHILDHOOD							MIDDLE CHILDHOOD						ADOLESCENCE										
AGE[1]	**Prenatal**[2]	**Newborn**[3]	**3-5 d**[4]	**By 1 mo**	**2 mo**	**4 mo**	**6 mo**	**9 mo**	**12 mo**	**15 mo**	**18 mo**	**24 mo**	**30 mo**	**3 y**	**4 y**	**5 y**	**6 y**	**7 y**	**8 y**	**9 y**	**10 y**	**11 y**	**12 y**	**13 y**	**14 y**	**15 y**	**16 y**	**17 y**	**18 y**	**19 y**	**20 y**	**21 y**
HISTORY Initial/Interval	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS																															
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Head Circumference		●	●	●	●	●	●	●	●	●	●	●																			
Weight for Length		●	●	●	●	●	●	●	●	●	●																				
Body Mass Index[5]												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Blood Pressure[6]		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SENSORY SCREENING																															
Vision[7]		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	★	●	★	●	★	●	★	★	●	★	★	★	★	★
Hearing		●[8]	●[9] →			★	★	★	★	★	★	★	★	★	●	●	●	★	●	★	●	←		●[10]	→	←		●	→	←		● →
DEVELOPMENTAL/BEHAVIORAL HEALTH																															
Developmental Screening[11]								●			●		●																		
Autism Spectrum Disorder Screening[12]											●	●																			
Developmental Surveillance		●	●	●	●	●	●		●	●		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Psychosocial/Behavioral Assessment[13]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tobacco, Alcohol, or Drug Use Assessment[14]																						★	★	★	★	★	★	★	★	★	★
Depression Screening[15]																							●	●	●	●	●	●	●	●	●
Maternal Depression Screening[16]				●	●	●	●																								
PHYSICAL EXAMINATION[17]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PROCEDURES[18]																															
Newborn Blood		●[19]	●[20] →																												
Newborn Bilirubin[21]		●																													
Critical Congenital Heart Defect[22]		●																													
Immunization[23]		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Anemia[24]						★			●	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Lead[25]							★	★	● or ★[26]		★	● or ★[26]		★	★	★	★															
Tuberculosis[27]				★			★		★			★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
Dyslipidemia[28]												★			★		★		←	● →		★	★	★	★	★	←		● →		
Sexually Transmitted Infections[29]																						★	★	★	★	★	★	★	★	★	★
HIV[30]																						★	★	★	★	←		● →	★	★	★
Hepatitis C Virus Infection[31]																													● →		
Cervical Dysplasia[32]																															●
ORAL HEALTH[33]							●[34]	●[34]	★		★	★	★	★	★	★	★														
Fluoride Varnish[35]							←			●		→																			
Fluoride Supplementation[36]							★	★	★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★					
ANTICIPATORY GUIDANCE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1. If a child comes under care for the first time at any point on the schedule, or if any items are not accomplished at the suggested age, the schedule should be brought up to date at the earliest possible time.
2. A prenatal visit is recommended for parents who are at high risk, for first-time parents, and for those who request a conference. The prenatal visit should include anticipatory guidance, pertinent medical history, and a discussion of benefits of breastfeeding and planned method of feeding, per "The Prenatal Visit" (https://pediatrics.aappublications.org/content/142/1/e20181218).
3. Newborns should have an evaluation after birth, and breastfeeding should be encouraged (and instruction and support should be offered).
4. Newborns should have an evaluation within 3 to 5 days of birth and within 48 to 72 hours after discharge from the hospital to include evaluation for feeding and jaundice. Breastfeeding newborns should receive formal breastfeeding evaluation, and their mothers should receive encouragement and instruction, as recommended in "Breastfeeding and the Use of Human Milk" (http://pediatrics.aappublications.org/content/129/3/e827.full). Newborns discharged less than 48 hours after delivery must be examined within 48 hours of discharge, per "Hospital Stay for Healthy Term Newborns" (http://pediatrics.aappublications.org/content/125/2/405.full).
5. Screen, per "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report" (http://pediatrics.aappublications.org/content/120/Supplement_4/S164.full)
6. Screening should occur per "Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents" (http://pediatrics.aappublications.org/content/140/3/e20171904). Blood pressure measurement in infants and children with specific risk conditions should be performed at visits before age 3 years.
7. A visual acuity screen is recommended at ages 4 and 5 years, as well as in cooperative 3-year-olds. Instrument-based screening may be used to assess risk at ages 12 and 24 months, in addition to the well visits at 3 through 5 years of age. See "Visual System Assessment in Infants, Children, and Young Adults by Pediatricians" (http://pediatrics.aappublications.org/content/137/1/e20153596) and "Procedures for the Evaluation of the Visual System by Pediatricians" (http://pediatrics.aappublications.org/content/137/1/e20153597).
8. Confirm initial screen was completed, verify results, and follow up, as appropriate. Newborns should be screened, per "Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs" (http://pediatrics.aappublications.org/content/120/4/898.full).
9. Verify results as soon as possible, and follow up, as appropriate.
10. Screen with audiometry including 6,000 and 8,000 Hz high frequencies once between 11 and 14 years, once between 15 and 17 years, and once between 18 and 21 years. See "The Sensitivity of Adolescent Hearing Screens Significantly Improves by Adding High Frequencies" (https://www.sciencedirect.com/science/article/abs/pii/S1054139X16000483).
11. Screening should occur per "Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening" (https://pediatrics.aappublications.org/content/145/1/e20193449).
12. Screening should occur per "Identification, Evaluation, and Management of Children With Autism Spectrum Disorder" (https://pediatrics.aappublications.org/content/145/1/e20193447).
13. This assessment should be family centered and may include an assessment of child social-emotional health, caregiver depression, and social determinants of health. See "Promoting Optimal Development: Screening for Behavioral and Emotional Problems" (http://pediatrics.aappublications.org/content/135/2/384) and "Poverty and Child Health in the United States" (http://pediatrics.aappublications.org/content/137/4/e20160339).
14. A recommended assessment tool is available at http://crafft.org.
15. Recommended screening using the Patient Health Questionnaire (PHQ)-2 or other tools available in the GLAD-PC toolkit and at https://downloads.aap.org/AAP/PDF/Mental_Health_Tools_for_Pediatrics.pdf.
16. Screening should occur per "Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice" (https://pediatrics.aappublications.org/content/143/1/e20183259).
17. At each visit, age-appropriate physical examination is essential, with infant totally unclothed and older children undressed and suitably draped. See "Use of Chaperones During the Physical Examination of the Pediatric Patient" (http://pediatrics.aappublications.org/content/127/5/991.full).
18. These may be modified, depending on entry point into schedule and individual need.
19. Confirm initial screen was accomplished, verify results, and follow up, as appropriate. The Recommended Uniform Screening Panel (https://www.hrsa.gov/advisory-committees/heritable-disorders/rusp/index.html), as determined by The Secretary's Advisory Committee on Heritable Disorders in Newborns and Children, and state newborn screening laws/regulations (https://www.babysfirsttest.org/newborn-screening/states) establish the criteria for and coverage of newborn screening procedures and programs.

(continued)

KEY: ● = to be performed ★ = risk assessment to be performed with appropriate action to follow, if positive ← ● → = range during which a service may be provided

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(continued)

20. Verify results as soon as possible, and follow up, as appropriate.
21. Confirm initial screening was accomplished, verify results, and follow up, as appropriate. See "Hyperbilirubinemia in the Newborn Infant ≥35 Weeks' Gestation: An Update With Clarifications" (http://pediatrics.aappublications.org/content/124/4/1193).
22. Screening for critical congenital heart disease using pulse oximetry should be performed in newborns, after 24 hours of age, before discharge from the hospital, per "Endorsement of Health and Human Services Recommendation for Pulse Oximetry Screening for Critical Congenital Heart Disease" (http://pediatrics.aappublications.org/content/129/1/190.full).
23. Schedules, per the AAP Committee on Infectious Diseases, are available at https://redbook.solutions.aap.org/SS/immunization_Schedules.aspx. Every visit should be an opportunity to update and complete a child's immunizations.
24. Perform risk assessment or screening, as appropriate, per recommendations in the current edition of the AAP *Pediatric Nutrition: Policy of the American Academy of Pediatrics* (Iron chapter).
25. For children at risk of lead exposure, see "Prevention of Childhood Lead Toxicity" (http://pediatrics.aappublications.org/content/138/1/e20161493) and "Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention" (http://www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf).
26. Perform risk assessments or screenings as appropriate, based on universal screening requirements for patients with Medicaid or in high prevalence areas.
27. Tuberculosis testing per recommendations of the AAP Committee on Infectious Diseases, published in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases.* Testing should be performed on recognition of high-risk factors.
28. See "Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents" (http://www.nhlbi.nih.gov/guidelines/cvd_ped/index.htm).
29. Adolescents should be screened for sexually transmitted infections (STIs) per recommendations in the current edition of the AAP *Red Book: Report of the Committee on Infectious Diseases.*
30. Adolescents should be screened for HIV according to the US Preventive Services Task Force (USPSTF) recommendations (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/human-immunodeficiency-virus-hiv-infection-screening) once between the ages of 15 and 18, making every effort to preserve confidentiality of the adolescent. Those at increased risk of HIV infection, including those who are sexually active, participate in injection drug use, or are being tested for other STIs, should be tested for HIV and reassessed annually.
31. All individuals should be screened for hepatitis C virus (HCV) infection according to the USPSTF (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-c-screening) and Centers for Disease Control and Prevention (CDC) recommendations (https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm) at least once between the ages of 18 and 79. Those at increased risk of HCV infection, including those who are persons with past or current injection drug use, should be tested for HCV infection and reassessed annually.
32. See USPSTF recommendations (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/cervical-cancer-screening). Indications for pelvic examinations prior to age 21 are noted in "Gynecologic Examination for Adolescents in the Pediatric Office Setting" (http://pediatrics.aappublications.org/content/126/3/583.full).
33. Assess whether the child has a dental home. If no dental home is identified, perform a risk assessment (https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Oral-Health-Practice-Tools.aspx) and refer to a dental home. Recommend brushing with fluoride toothpaste in the proper dosage for age. See "Maintaining and Improving the Oral Health of Young Children" (http://pediatrics.aappublications.org/content/134/6/1224).
34. Perform a risk assessment (https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Oral-Health-Practice-Tools.aspx). See "Maintaining and Improving the Oral Health of Young Children" (http://pediatrics.aappublications.org/content/134/6/1224).
35. See USPSTF recommendations (https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/dental-caries-in-children-from-birth-through-age-5-years-screening). Once teeth are present, fluoride varnish may be applied to all children every 3 to 6 months in the primary care or dental office. Indications for fluoride use are noted in "Fluoride Use in Caries Prevention in the Primary Care Setting" (http://pediatrics.aappublications.org/content/134/3/626).
36. If primary water source is deficient in fluoride, consider oral fluoride supplementation. See "Fluoride Use in Caries Prevention in the Primary Care Setting" (http://pediatrics.aappublications.org/content/134/3/626).

Summary of Changes Made to the Bright Futures/AAP Recommendations for Preventive Pediatric Health Care (Periodicity Schedule)

This schedule reflects changes approved in November 2020 and published in March 2021. For updates and a list of previous changes made, visit www.aap.org/periodicityschedule.

CHANGES MADE IN NOVEMBER 2020

DEVELOPMENTAL

- Footnote 11 has been updated to read as follows: "Screening should occur per 'Promoting Optimal Development: Identifying Infant and Young Children With Developmental Disorders Through Developmental Surveillance and Screening' (https://pediatrics.aappublications.org/content/145/1/e20193449)."

AUTISM SPECTRUM DISORDER

- Footnote 12 has been updated to read as follows: "Screening should occur per 'Identification, Evaluation, and Management of Children With Autism Spectrum Disorder' (https://pediatrics.aappublications.org/content/145/1/e20193447)."

HEPATITIS C VIRUS INFECTION

- Screening for hepatitis C virus infection has been added to occur at least once between the ages of 18 and 79 years (to be consistent with recommendations of the USPSTF and CDC).
- Footnote 31 has been added to read as follows: "All individuals should be screened for hepatitis C virus (HCV) infection according to the USPSTF (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/hepatitis-c-screening) and Centers for Disease Control and Prevention (CDC) recommendations (https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm) at least once between the ages of 18 and 79. Those at increased risk of HCV infection, including those who are persons with past or current injection drug use, should be tested for HCV infection and reassessed annually."
- Footnotes 31 through 35 have been renumbered as footnotes 32 through 36.

CHANGES MADE IN OCTOBER 2019

MATERNAL DEPRESSION

- Footnote 16 has been updated to read as follows: "Screening should occur per 'Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice' (https://pediatrics.aappublications.org/content/143/1/e20183259)."

CHANGES MADE IN DECEMBER 2018

BLOOD PRESSURE

- Footnote 6 has been updated to read as follows: "Screening should occur per 'Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents' (http://pediatrics.aappublications.org/content/140/3/e20171904). Blood pressure measurement in infants and children with specific risk conditions should be performed at visits before age 3 years."

ANEMIA

- Footnote 24 has been updated to read as follows: "Perform risk assessment or screening, as appropriate, per recommendations in the current edition of the AAP *Pediatric Nutrition: Policy of the American Academy of Pediatrics* (Iron chapter)."

LEAD

- Footnote 25 has been updated to read as follows: "For children at risk of lead exposure, see 'Prevention of Childhood Lead Toxicity' (http://pediatrics.aappublications.org/content /138/1/e20161493) and 'Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention' (https://www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf)."

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This program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling $5,000,000 with 10 percent financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov.

Evidence and Rationale

Health supervision is a complex and comprehensive package of services that takes place over each child's lifetime. It includes recommended preventive interventions, such as counseling or screening, and addresses the particular needs of each child in the context of family and community. Pediatric health care professionals have a unique opportunity to assess the health and developmental trajectory of children over time because of the frequent visits for both well-child and sick care. Monitoring a child's health over time (known as surveillance) is an important and complementary process of defined periodic assessment using standardized screening tools.

The *Bright Futures/AAP Recommendations for Preventive Pediatric Health Care (Periodicity Schedule)* are the standard for child preventive services. The *Bright Futures Guidelines,* 4th Edition, provide, evidence-informed guidance for implementing the recommendations included in the *Periodicity Schedule.* The *Bright Futures Guidelines* also describe other preventive care services that are likely to be beneficial but that are not supported by the same degree of evidence. In these instances, the *Guidelines* provide a rationale for the recommended preventive service and guidance to help pediatric health care professionals implement the service. We encourage pediatric health care professionals to also adopt these recommendations, for they were developed by expert panels with extensive feedback from families and the general public. Understanding the value of any specific preventive care service for children and their families is challenging because the intended outcomes may not develop for many years and may be difficult to measure. In addition, individual preventive services are not provided in isolation but are additive. For example, recommendations about how to have a stimulating but safe environment can be based on a developmental assessment and at the same time incorporate anticipatory guidance promoting early literacy.

Evidence regarding the overall benefit and feasibility of providing preventive services in the primary care setting continues to be central to the recommendations for child health supervision in the *Bright Futures Guidelines.* We continue to emphasize that lack of evidence does not mean a lack of effectiveness. However, we also recognize the importance of demonstrating the value of the services that are central to pediatric care and for ensuring that the potential benefit of each recommended preventive service is balanced against potential harm (eg, labeling, overdiagnosis, opportunity cost). Filling the evidence gaps is highly desirable, and additional research is strongly encouraged.[1] However, it is not necessarily in the best interests of children's health for many of the specific interventions to stop until the evidence base is adequate. We believe that it is central to the practice of pediatric preventive care for health care professionals to understand the current state of the evidence, and we hope that they will participate in the important work necessary to improve the evidence base.

The *Periodicity Schedule* is reserved for preventive services with the highest degree of supporting evidence. Included are the Grade A and Grade B recommendations made by the US Preventive Services Task Force (USPSTF), the

community-based recommendations endorsed by the Centers for Disease Control and Prevention (CDC) Community Guide, and other preventive care services endorsed by the American Academy of Pediatrics (AAP) Executive Committee and Board of Directors. All of these services are based on a high degree of certainty of net benefit to children and their families. The *Periodicity Schedule* is continually reviewed and updated between editions of the *Bright Futures Guidelines* in a process directed by the Bright Futures Steering Committee and the AAP Committee on Practice and Ambulatory Medicine. Deciding which preventive services should be included in the *Periodicity Schedule* is a complex task because of the incomplete evidence base regarding benefits and harms of preventive care services. The committees are fully committed to using a clearly defined and fully transparent process that weighs benefits, risk, and uncertainties of preventive services when making recommendations for updates to the *Periodicity Schedule*.

Autism Spectrum Disorder

The AAP has recommended administering an autism spectrum disorder (ASD)–specific screening tool at the 18 Month and 2 Year health supervision visits in addition to a general developmental screening tool. The USPSTF has concluded that current evidence is insufficient to recommend for or against screening for ASD in young children when no concerns of ASD have been raised by their parents or no clinical suspicion exists (I Statement).[3] Although the USPSTF found that screening can accurately identify children with ASD, it found a lack of evidence regarding the benefit of treatment for otherwise asymptomatic individuals.

Autism Spectrum Disorder: Universal	
Bright Futures Visits	**18 Month, 2 Year**
Citation	American Academy of Pediatrics Council on Children with Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee and Medical Home Initiatives for Children With Special Needs Project Advisory Committee. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. *Pediatrics.* 2006;118(1):405-420

Development

Consensus exists within the AAP and with others regarding the value of early detection and intervention for developmental delays, including gross motor, fine motor, communication, and social development. Surveillance, even by experienced parents and pediatric health care professionals, can miss cases. Therefore, in 2006 the AAP recommended developmental screening at specific ages in addition to surveillance at each preventive care visit.

All children, most of whom will not have identifiable risks or whose development appears to be proceeding typically, should receive periodic developmental screening using a standardized test. In the absence of established risk factors or parental or provider concerns, a general developmental screening, including neuromotor screening, is recommended at the 9 Month, 18 Month, and 2½ Year Visits.

These recommended ages for developmental screening are suggested only as a starting point for children who appear to be developing normally. Surveillance should continue throughout childhood, and screenings should be conducted anytime concerns are raised by parents, child health professionals, or others involved in the care of the child.

Speech and Language

The USPSTF has concluded that current evidence is insufficient to recommend for or against the routine use of brief, formal screening instruments in primary care to detect speech and language delay in babies and children up to age 5 years (I Statement).[10]

Uncertainty exists on the accuracy of tests available to screen specifically for speech or language delay or disorders and the outcomes for children identified specifically through screening.

Bright Futures does not recommend screening specifically for speech or language delay or disorders but instead recommends broadband developmental screening as well as surveillance over time to evaluate the developmental trajectory of the child. This approach can identify speech and language delay or disorders, as well as other developmental problems.

Gross Motor and Other Development Screening at 4 Years of Age

Bright Futures does not recommend screening at 4 years of age. No new strong evidence has been published since the AAP 2006 statement. Motor development evaluation at 4 years of age has been reviewed and is a suggested component of the physical examination at this visit.[11]

Development: Universal	
Bright Futures Visits	**9, 18 Month; 2½ Year**
Citations	American Academy of Pediatrics Council on Children With Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee and Medical Home Initiatives for Children With Special Needs Project Advisory Committee. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. *Pediatrics.* 2006;118(1):405-420 (pp 409, 414) AAP publications retired and reaffirmed. *Pediatrics.* 2010;125(2):e444-e445 AAP publications reaffirmed or retired. *Pediatrics.* 2014;134(5):e1520-e1520

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CLINICAL REPORT Guidance for the Clinician in Rendering Pediatric Care

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Executive Summary: Identification, Evaluation, and Management of Children With Autism Spectrum Disorder

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INTRODUCTION

Autism spectrum disorder (ASD) is a common neurodevelopmental disorder with reported prevalence in the United States of 1 in 59 children (approximately 1.7%). ASD significantly influences the lives of affected children and families because they may need extensive behavioral, educational, health, and other services. Primary care providers play a critical role in identifying, diagnosing, and managing ASD in children and providing support for their families. This document provides a summary of the clinical report "Identification, Evaluation, and Management of Children with Autism Spectrum Disorder," published concurrently in the online version of *Pediatrics*. In the years since 2007, when the American Academy of Pediatrics published the clinical reports "Identification and Diagnosis of Children with Autism Spectrum Disorders" and "Management of Children with Autism Spectrum Disorders," reported prevalence rates of children with ASD have increased, understanding of potential risk factors has expanded, awareness of co-occurring medical and behavioral conditions and genetic contribution to etiology has improved, and the body of research supporting evidence-based interventions has grown substantially. The updated document discusses evaluation and treatment as a continuum in 1 publication with a table of contents to help the reader identify topic areas within the report. ASD is more commonly diagnosed than in the past, and the significant health, educational, and social needs of individuals with ASD and their families constitute an area of critical need for resources, research, and professional education.

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DOI: https://doi.org/10.1542/peds.2019-3448

(Continued)

To cite: Hyman SL, Levy SE, Myers SM, AAP COUNCIL ON CHILDREN WITH DISABILITIES, SECTION ON DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS. Executive Summary: Identification, Evaluation, and Management of Children With Autism Spectrum Disorder. *Pediatrics*. 2020;145(1): e20193448

1. TIMELY DIAGNOSIS, EARLY IDENTIFICATION, AND EVIDENCE-BASED INTERVENTION

- *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) diagnosis: With the publication of the DSM-5 in 2013, there is a single category of ASD, replacing the subtypes of autistic disorder, Asperger syndrome, and pervasive developmental disorder not otherwise specified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*. Core deficits are identified in 2 domains: social communication and interaction and restrictive, repetitive patterns of behavior. The DSM-5 recognizes that other co-occurring conditions like intellectual disability, language disorders, and behavioral health conditions such as attention-deficit/hyperactivity disorder and anxiety disorders may also be diagnosed in individuals with ASD. A diagnosis of ASD is made by a clinical evaluation that supports the DSM-5 criteria, including history and observation of characteristic behaviors, preferably using standardized approaches. Independent of age, a child who is evaluated for ASD should have standardized assessment of psychoeducational, adaptive, and language abilities, including pragmatic or social language.
- Early identification: General developmental screening using a validated tool continues to be recommended at 9, 18, and 30 months of age. ASD is common, can be diagnosed as young as 18 months of age, and has evidence-based interventions. Research into newer tools has promise to extend the age of diagnosis lower. Therefore, ongoing developmental and behavioral surveillance in addition to screening for ASD at 18 and 24 months of age continues to be recommended in primary care. Screening or surveillance may take place in other settings, with communication of findings to the primary care provider. More accurate and culturally sensitive screening approaches are needed. Ongoing developmental surveillance through school age is important. Children with typical intellectual abilities may not be diagnosed until their social differences become evident with the increased demands of the school environment. Clinicians need to recognize that some children will be at increased risk for ASD because they have a sibling with ASD, were born preterm, were exposed to teratogens (eg, valproic acid), or have other risk factors.
- Timely diagnosis: Toddlers and children should be referred for diagnostic evaluation when increased risk for developmental disorders (including ASD) is identified through screening and/or surveillance. Most children with ASD will have other developmental issues. Standard of care requires evaluation of multiple streams of development, including cognitive, communication, motor, and adaptive skills. In many settings, this evaluation may be best accomplished by team evaluations, including, for example, psychology, speech and language, occupational therapy, physical therapy, and special education. This type of evaluation may occur through an early intervention program, school system, or appropriate insurance-funded evaluator(s) whenever ASD, with or without other delays, is suspected. Children should be referred for intervention for all identified developmental delays at the time of identification and not wait for an ASD diagnostic evaluation to take place. The referral should be to a clinician experienced in diagnosis, which might be a developmental-behavioral or neurodevelopmental pediatrician, neurologist, psychiatrist, psychologist, or primary care provider with requisite training. Clinicians should be particularly aware of the potential for delayed diagnosis in children from underserved groups and whose families speak languages other than English.
- Early and effective intervention: Clinicians should respond appropriately to family or clinical concerns and results of screening to avoid delays in diagnosis and treatment. Intervention for the communicative, adaptive, and behavioral deficits associated with ASD should take place as soon as the need becomes evident. Intervention is most effective if it is early, intense, and involves the family. Research has demonstrated that interventions using principles of behavioral intervention are associated with skill acquisition and improved outcome. There is evidence that training parents to support developmental skill building is helpful. Primary care providers should help families learn to interpret evidence about interventions so they can make informed decisions about their child's care. Many interventions, including many nutritional interventions, do not have evidence to support their use at this time. Families should be referred to community support resources and be included in the shared decision-making process.
- Etiologic evaluation: The pediatric provider needs to consider genetic and neurologic disorders that are associated with ASD. Knowledge of the etiology of the child's condition can help guide monitoring for co-occurring conditions, potentially influence therapy choices, help families understand recurrence risk estimates, and help therapists provide individualized behavioral, educational, motor, and communication intervention plans.

Families should be offered genetic evaluation, including chromosomal microarray and fragile X testing, with consideration of other cytogenetic and molecular testing, as indicated. Consultation with a pediatric geneticist may be warranted. Metabolic testing, EEG, neuroimaging, and additional workup of medical symptoms are guided by history and physical examination.

- Medical management of co-occurring conditions: The value of routine primary care visits and anticipatory guidance for children with chronic conditions is stressed. The primary care provider should be aware of common co-occurring conditions and include surveillance for and management of these conditions in the context of routine care with subspecialty referral, as appropriate. Examples of common co-occurring conditions are disorders of sleep, feeding problems, gastrointestinal symptoms, obesity, seizures, attention-deficit/hyperactivity disorder, anxiety, wandering or elopement, and others.

High-quality pediatric care calls for the development of systems to promote accurate and early identification, cost-effective and timely diagnosis, prompt implementation of evidence-based interventions, involvement of the patient and family in shared decision-making, and steps toward elimination of disparities in access to care for all children and youth with ASD. Care within a medical home, using a chronic care model in which health and community systems interact with informed patients and families to ensure more-satisfactory outcomes, is recommended for children with ASD.

2. COLLABORATION OF SYSTEMS OF CARE

- Evidence-based interventions*:* Children and youth with ASD should be provided evidence-based interventions to address the core social communication and interaction and restricted and repetitive behavior symptoms as well as associated impairments. Attention to social skills development should be addressed in school, community, behavioral health, and family settings. The primary care provider should be aware of the recommendation for educational services in the least-restrictive environment and the hierarchy of educational interventions based on a student's needs in school rather than a medical diagnosis of ASD.
- Common co-occurring conditions: Although ASD is a neurodevelopmental disorder characterized by symptoms related to social interaction and repetitive behaviors, there is increasing awareness that physical, behavioral, and mental symptoms affect the care of children and youth with ASD. Children and youth with ASD should have anticipatory guidance for common co-occurring conditions in the context of well-child care, referral as necessary for specialty care, and ongoing management as possible in the medical home.
- Behavioral health interventions*:* Providers should be aware of the common behavioral challenges faced by children and youth with ASD and be prepared to provide parent counseling and initial management of sleep problems, food refusal, and disruptive behaviors, with referral to appropriate specialty and mental health care if needed. It is important to evaluate the medical and behavioral causes for behavior change. Pain and discomfort from medical conditions and behavioral modifications should be addressed. Medication may be a useful addition for management of attention, hyperactivity, anxiety, and disruptive behaviors as part of an overall treatment strategy.
- Community services*:* The primary care provider needs to know where to refer families for information about community services, such as respite and leisure activities for individuals with ASD and other developmental disabilities. To promote wellness, communities should provide opportunities for individuals with ASD to participate in inclusive and appropriate active leisure activities. Clinicians should educate families about managing ASD as a chronic condition.

3. PLANNING FOR ADOLESCENCE AND TRANSITION TO ADULT SYSTEMS OF CARE

- Communities should build services to promote social skills appropriate for work and postsecondary education, access to appropriate medical and behavioral health services, job skills development, and community leisure opportunities. The medical home provider should support the family and youth to advocate for appropriate postsecondary work or schooling, residential supports, and activities to maintain a healthy lifestyle. The family needs to plan for the needs of the child in adulthood by making the necessary preparations for public programs (such as Supplemental Security Income) and personal financial planning.
- Pediatricians need to engage with families and youth to plan a transition to adult medical and behavioral health care.

4. PROMOTING SHARED DECISION-MAKING WITH INDIVIDUALS WITH ASD AND THEIR FAMILIES

Shared decision-making calls for the health care provider to engage in respectful, reciprocal dialogue to plan and monitor choices in care. The pediatrician can help educate youth

with ASD and their families about how to evaluate the evidence for interventions, advocate for participation in clinical research when appropriate, refer families to support organizations, include the patient in decision-making, and prepare families to navigate transitions.

5. ONGOING EDUCATION OF PEDIATRIC PROVIDERS TO SUPPORT AN INFORMED MEDICAL HOME FOR CHILDREN AND YOUTH WITH ASD

All children and youth with ASD should have a medical home, a source of care that is accessible, collaborative, culturally sensitive, knowledgeable, and cost-effective. To best serve patients and families affected by ASD, the clinician caring for children and youth with ASD should be familiar with issues related to diagnosis, co-occurring medical and behavioral conditions, and the impact of ASD on the family to provide a medical home for these patients. Actively addressing capacity building to care for children and youth with ASD requires initiatives directed at provider education and practice quality improvement and public health, educational, and social programs to support families in their journey from diagnosis to service provision to the transition to adult care.

6. SUPPORT FOR A NATIONAL AGENDA FOR BASIC, CLINICAL, AND HEALTH SERVICES RESEARCH ABOUT ASD

The American Academy of Pediatrics supports the current approach taken by the Interagency Autism Coordinating Committee of the National Institutes of Health of including representative stakeholders in planning a meaningful research agenda. Stakeholders include families and affected individuals, scientists, clinicians, and public health agencies. This committee's 2009 strategic plan, updated in 2017, identified 7 areas for research funding: (1) early detection, (2) underlying biology, (3) genetic and environmental risk factors, (4) treatments and interventions, (5) services and implementation science, (6) life span services and supports, and (7) epidemiological surveillance and infrastructure. It is important that multiple levels of inquiry be pursued simultaneously to inform evidence-based clinical care. These include the following:

- o basic and translational science in the areas of genetics and epigenetics, neurobiology, environmental risk factors, and psychopharmacology to understand the typical and atypical brain development and function to develop ASD-specific behavioral and pharmacologic therapies;
- o clinical trials to test focused interventions informed by translational studies to provide the evidence necessary for community implementation;
- o epidemiological surveillance to gather data important for planning for current and future needs, including screening, diagnosis, and life span health and mental health services, with special attention to underserved populations; and
- o health services research to provide guidance for comprehensive, accessible, and culturally appropriate medical, educational, and behavioral care for children, youth, adults, and families affected by ASD.

Research in all of these areas is critical to move forward with early diagnosis, effective treatment, and evidence-based interventions at each age. To provide appropriate care to all children and families affected by ASD, organizations responsible for health, education, social services, and public health need to collaborate and build integrated and adequately funded and staffed systems. The pediatric health care provider plays a critical role in identifying young children at risk for ASD; shepherding these children through diagnosis and into effective interventions; supporting the families, including siblings; anticipating and managing co-occurring health and behavioral disorders; and preparing the youth and family for transition to adult services. The updated clinical report provides the health care provider with information and resources to support the care of the child and family affected by ASD.

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ABBREVIATIONS

ASD: autism spectrum disorder
DSM-5: *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: No external funding.

POTENTIAL CONFLICT OF INTEREST: MeMix LLC is a company that makes an app (for phones). Dr Levy is on the advisory board for the app's development. This app is being developed to assist in nutritional and dietary management of children with autism. Dr Levy has not received any money yet from this company. This app is the focus of a National Institutes of Health R21 grant, for which Dr Levy is funded for ~2% of her salary. Once it is studied and marketed (if appropriate), Dr Levy will (possibly in the future) earn some money. Dr Levy has worked with MeMix LLC from 2015 to the present. Dr Hyman is the site principal investigator of a clinical trial of a novel agent being tested to promote social function in patients with autism. The University of Rochester (Dr Hyman's institution) was 1 of >40 sites and had 2 study participants in 2018. University of Rochester will be leaving the trial in 2019 (withdrawal submitted) because of staffing, and that reimbursement for staff time does not cover the cost of participation. Funding was for the staff to complete the assessments required for the clinical trial. Dr Hyman got no personal reimbursement from the company; the funding was for staff time for recruitment and assessment and clinical research center support for the trial. Dr Myers has indicated he has no potential conflicts of interest to disclose.

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