



CLINICAL REPORT

Comprehensive Health Evaluation of the Newly Adopted Child

abstract

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Children who join families through the process of adoption often have multiple health care needs. After placement in an adoptive home, it is essential that these children have a timely comprehensive health evaluation. This evaluation should include a review of all available medical records and a complete physical examination. Evaluation should also include diagnostic testing based on the findings from the history and physical examination as well as the risks presented by the child's previous living conditions. Age-appropriate screens should be performed, including, for example, newborn screening panels, hearing, vision, dental, and formal behavioral/developmental screens. The comprehensive assessment can occur at the time of the initial visit to the physician after adoptive placement or can take place over several visits. Adopted children should be referred to other medical specialists as deemed appropriate. The Section on Adoption and Foster Care is a resource within the American Academy of Pediatrics for physicians providing care for children who are being adopted. *Pediatrics* 2012;129:e214–e223

Increasing numbers of children are joining families through adoption. It is estimated that every year, more than 100 000 children are adopted in the United States.¹ Children can be adopted through the national public welfare system, private agencies, existing relationships, or the international process. Regardless of the route or timing of adoption, these children may have a myriad of special health care needs. Numerous studies have demonstrated that many children who enter the foster care system or children adopted domestically or internationally have an increased incidence of physical, developmental, and mental health concerns.^{2–5} Although these concerns may be addressed before adoption, many of these issues persist and continue to be significant or do not become apparent until after the time of placement in an adoptive home.

The number of international adoptions has tripled over the past 15 years, with an average of 22 000 adoptees entering the United States each year for the past 4 years.^{6,7} Most of these children come from China, Guatemala, Russia, Ethiopia, South Korea, Vietnam, Ukraine, and Kazakhstan.⁷ Regardless of their countries of origin, many of these children may have concerns related to infectious diseases and developmental delays.^{4,8–13} Several risk factors have been identified that may account for the aforementioned outcomes, including poverty, little or no prenatal care, malnutrition, perinatal and postnatal exposure to bloodborne and environmental toxins and pathogens, and inadequate

Veronnie F. Jones, MD, PhD, MSPH and COMMITTEE ON EARLY CHILDHOOD, ADOPTION, AND DEPENDENT CARE

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

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developmental stimulation and emotional sustenance.^{14,15} Children available for adoption are at high risk of having been exposed prenatally to illegal drugs or alcohol.^{8,15,16} Before adoption, children may have been directly or indirectly exposed to physical, emotional, or sexual abuse.⁸

Pediatricians have played a significant role in the adoption process, in some cases providing counseling to parents during the preadoption phase and subsequently providing health care for these children. The pediatrician must be aware of the special needs of many of these children to evaluate and treat them appropriately. The pediatrician also needs to become knowledgeable of the resources available to help families integrate the new adoptee into the family unit. The purpose of this statement is to provide the general pediatrician with practical guidance that addresses the initial comprehensive health evaluation of adopted children.

COMPONENTS OF THE INITIAL PLACEMENT EVALUATION

A comprehensive medical evaluation should be completed soon after placement in an adoptive home to confirm and clarify existing medical diagnoses, assess for any previously unrecognized medical issues, discuss developmental and behavioral concerns, and make appropriate referrals.⁸ This evaluation should include a thorough review of the medical history, including an assessment of health risks, a developmental assessment, and a complete, unclothed physical examination.^{8,9,15,17} The initial health evaluation of an adopted child should be comprehensive in nature, but it is not necessary for this to occur during only one medical visit. Several visits to the pediatrician may be necessary to complete the assessment of the child's history, to review laboratory findings, and to make referrals to medical, developmental, mental

health, and dental specialists. Subsequent evaluations, including referrals and laboratory testing, should be undertaken to allow for comprehensive health planning.

The Preadoption Visit

The preadoption visit can be helpful for the adoptive family.^{15,17–21} Parents may request the pediatrician review medical records of the child and/or biological parents. The pediatrician may be able to use those records to help parents determine additional questions that could clarify a particular health issue and help parents clarify what special needs they are prepared to accept. Some specific issues to address in the medical records include growth trends and a preliminary assessment of developmental progress, and, if available, family history and information about the pregnancy course and childbirth. The pediatrician may offer clarification of medical diagnoses, particularly from international adoptions, that may be more prevalent in particular regions of the world.^{17,18,20} Besides medical records, parents may have other materials, such as photos and video, for review. Although these may be informative to confirm or refute what is written in the medical record, they do not provide a conclusive diagnosis. The preadoption visit also allows for counseling on other issues. The issue of closed versus open adoption can be explored with the parents. Open adoption describes a continuum of communication between the birth parents and the adoptive family.²² Pediatricians should discuss with families the extent of communication between the adoptive family and the biological family and provide needed support by identifying potential and real benefits and drawbacks to the relationship.

Special issues related to nutrition of the child could be addressed. Some

families may be interested in breastfeeding their infant, so the pediatrician needs to be familiar and supportive of the option and techniques of induced lactation.^{23,24} Finally, providing information about available community support services may ease the transition for the expected family. For further assistance, the primary care physician can consult with the American Academy of Pediatrics (AAP) Section on Adoption and Foster Care.

Initial History and Review of Medical Records

When a child presents for an initial complete adoption evaluation, a review of the current and past medical history must be undertaken, with particular attention to any previous medical findings in the child's medical records. The Electronic Health Record (EHR), using the Health Information Exchange standards, may eventually help facilitate transfer of this medical information. A list of information to be sought from the child's history is provided in Table 1.

A complete medical history, including prenatal history obtained from the mother and genetic history obtained from both parents, is ideal but rarely available.¹⁰ The adoption agency social worker (who should be trained appropriately to do a skilled genetic, medical, and prenatal interview) should take an extensive history from the birth parent(s), if possible, and enter these data into the formal medical record for the future adoptive parent. Perinatal risks, which must include lifestyle-related information about the parent(s) that may affect the fetus at birth or later in development, also should be reviewed.^{19,21} Such information includes parental use of alcohol or drugs and history of sexual practices that increase the risk of sexually transmitted infections both in the mother and her

TABLE 1 Review of Medical History/Previous Records

- Birth records should be obtained whenever possible, particularly for children younger than 6 y
 - Prenatal blood and urine test results of biological mother
 - Exposure to medications, illegal substances, alcohol, tobacco
 - Gestational age, birth weight, length, head size; Apgar scores
 - Prenatal concerns, neonatal complications
 - Newborn hearing screening results
 - Results of newborn metabolic screening
- Previous growth points, including head circumference
- History of abuse, physical and sexual; history of neglect
- Reason for placement into adoptive home
 - Voluntary versus involuntary termination of parental rights
- Nutritional history, particularly with respect to iron, calcium, vitamin D, iodine, and other nutrients
 - Assess current dietary habits
 - Determine whether the child has any issues eating textured foods
 - Exercise history
- Developmental milestones, past and present
- Behavioral issues, particularly with respect to socialization, indiscriminate friendliness
- Laboratory test results, radiographic studies, other studies
- Immunizations
 - School records may be sufficient, particularly for older children
 - Original records and adequate timing of doses should be verified with antibody titers
 - Children with no records or records that do not appear to be original or accurate should be reimmunized
- Results (if known) of previous testing for tuberculosis, including treatment
- Chronic medical diagnoses
- Allergies (medication, food, environmental, latex, insect stings)
- Medications (both used acutely and chronically)
- Reports from previous specialists seen
 - Consider having an original translation of records from other countries
- Family history (when available)
 - Vision, hearing deficits
 - Genetic diseases
 - Concerns related to ethnicity (eg, sickle cell anemia, thalassemia, Tay Sachs disease, lactose intolerance)
 - Mental health diagnoses
- Environmental risk factors
 - Lead risks
 - Institutionalization
 - Reason and timing, if known, of placement
 - If known, feeding and sleeping schedule and environment where feeding and sleeping occurred
 - Risks for previous physical, emotional, and sexual abuse
 - Substandard housing, multiple changes in residence
 - Family members using illegal substances or alcohol, domestic violence
 - Passive tobacco exposure, methamphetamines, other illicit substances in the home environment
 - Other environmental toxins, both in the home and in the surrounding community
- Number of prior placements, quality of such care

Notes:

- Children who have been adopted internationally may have neurologic, hematologic, cardiac, and metabolic disorders that were previously overdiagnosed, underdiagnosed, or missed completely.
- Medical records from other countries (if available) may be limited in information, inaccurate, or even falsified.
- For children adopted domestically, there may be issues of confidentiality associated with obtaining records, particularly if the child's name was changed at the time of the adoption. In all cases, physicians should work with families and adoption workers to obtain complete medical records, while also strictly adhering to laws regarding confidentiality of medical information.

partner(s). Physicians and adoption agency social workers should be trained to obtain such information in a manner that is sensitive to the psychological and cultural issues of the families.²⁵

Children being adopted from foster care most likely have had fragmented care and limited continuity of medical records. Health care before foster care placement may have been inadequate, with multiple unmet medical needs.^{1,19,26}

The AAP recommends a comprehensive health evaluation of all children at the time of entrance into foster care.²⁶ The medical records from all previous health care providers should be made available for review for the adoptive parents as soon as possible after placement into an adoptive home and before finalization of adoption from foster care. Lack of availability of medical records should not delay the timing of the initial comprehensive health evaluation. Parents, working in collaboration with their legal representative, their pediatrician, and local child welfare and adoption agencies, should obtain the child's complete medical records, including (if possible) developmental, educational, and mental health assessments.^{1,27} For children being adopted from foster care, equal emphasis should be placed on review of the medical history and the physical examination of the child.^{1,19}

With international placements, medical history may be sparse or inaccurate. The evaluation of a child who has been adopted internationally will depend, to a large degree, on a complete physical examination and comprehensive laboratory screening based on environmental, nutritional, ethnic, and infectious disease risks.^{8,28} Pediatricians should take advantage of current literature that specifically addresses issues that may be prevalent for a potential health risk secondary to the child's countries of origin.^{17,28,29}

Initial Physical Examination

The initial physical examination, as noted in Table 2, should be comprehensive, with particular attention to systems that have been found to be more "at risk" for adopted children.^{1,5,30,31} Care should be used when approaching the newly adopted child, particularly for internationally

TABLE 2 Components of the Comprehensive Physical Examination Pertinent to Adoption

- Vital signs (temperature, pulse, respiratory rate, blood pressure)
- Growth points, including length or height, weight, head circumference (on all children). Data should be plotted on World Health Organization growth charts, along with comparison with any measurements previously obtained. Body mass index should be calculated and plotted.
- Complete physical examination, with emphasis on the following areas:
 - Skin examination
 - Identify infectious diseases, rashes, or infestations, including scabies, lice, and impetigo
 - Identify and document any congenital skin abnormalities, including hemangiomas, nevi, and blue macules of infancy (usually seen in children of Asian, African, or Hispanic ethnicity).
 - Identify and document bruises or scars that may have resulted from previous abuse or previous immunization.
 - Careful genitalia examination (including the anus) should be performed to identify any abnormality suspicious for prior sexual abuse or genital cutting.
 - Testing for sexually transmitted diseases should be performed with any suspicion of abuse.
 - Testing for sexually transmitted diseases should be performed if sexually active.
 - Neurologic examination, with emphasis on developmental and neurologic abnormalities.

adopted children. The child, who may be new to the country, may have never experienced a comprehensive examination and may become anxious. For older international adoptees, it is often helpful to have a translator present to explain what is happening. For all children, one needs to go slowly and be sensitive to the child's cues and provide reassurance.

Growth parameters, including height, weight, and head circumference, should be measured accurately for all children. Ethnically oriented growth charts should be used when available, particularly for international adoptees. If possible, previous measurements should be obtained to assess growth over time, because this may provide an objective assessment of the child's nutritional and medical status.^{15,21} Attention should be given to the child's general appearance. Any abnormal features that might be suggestive of a genetic disorder, syndromes (such as fetal alcohol syndrome), or congenital defects should be noted, as should any abnormalities of the skin that may lead to a diagnosis of an infectious disease or are suggestive of previous abuse. A thorough but sensitive examination of the genital area should be performed to identify any abnormality suggestive of previous sexual abuse. Ritual genital cutting should be documented. The timing of this examination may need to be adjusted depending on the child.

Children who have been traumatized in the past and are new to their adoptive homes may become anxious and overwhelmed. If the relationship with the adoptive parent is still very new, the child may feel helpless without adequate support. As is expected for any new patient, a comprehensive neurologic examination should be performed.

Referral for Diagnostic Testing

For all children, diagnostic studies appropriate for the evaluation of the child's risk factors should be completed (Table 3). Children born outside of the United States should have all tests that were completed in the country of birth repeated according to US recommendations.¹⁵ Previous laboratory testing may not be verifiable because of concerns about accuracy, appropriate reporting and interpretation, and timing of the tests. Recommendations are also available for children who have lived in foster care.²⁶ For children who lived in a foster home before finalization of adoption, diagnostic studies do not need to be repeated if the physician can review the results of the diagnostic studies, unless there has been additional risk of infectious disease and environmental exposures. Children being adopted shortly after birth should have accurate verification of the biological mother's prenatal laboratory studies, with testing performed on the child if the information

is unavailable or if the accuracy of the records is unclear.

Children who previously lived in conditions of significant poverty, in institutional settings, or in other countries are at particular risk of infectious diseases. Recommendations for screening children adopted internationally are available in the current *AAP Red Book*.¹⁷

Immunizations

Immunization records should be reviewed carefully, particularly with respect to the immunizations given, the dates, intervals between vaccines, and the age of the child at the time the immunizations were given.^{7,17,31} Records for children who have lived in several foster homes may be incomplete. Children who were immunized in an institutional setting may have an inadequate immunologic response because of poor storage of vaccines or vaccines used beyond the expiration date.³² For children with previous immunizations, vaccines may be repeated for most children using an accelerated immunization schedule.¹⁷ As an alternative, antibody titers may be performed to determine serum immunity for major antigens (see Table 4 for recommended antibody titers). This approach is usually more cost-effective for older children.^{28,30} If antibody concentrations are to be obtained, it is important to interpret results in light of the dates of the last vaccine doses and possible persistence of maternal antibodies. An

TABLE 3 Diagnostic Testing

- Infectious diseases (for updates on infectious disease screening, please consult the current AAP *Red Book*¹⁷)
 - Hepatitis B surface antigen (HBsAg), hepatitis C antibody (if from country with high prevalence)
 - HIV 1 and 2 serologic testing
 - Syphilis serologic testing
 - Nontreponemal test (RPR, VDRL, or ART)
 - Treponemal test (MHA-TP, FTA-ABS, or TPPA)
 - For newborn infants, acceptable testing includes biological mother's prenatal laboratory test results.
 - For children adopted internationally, all testing done before adoption should be repeated.
 - For children adopted internationally, the aforementioned bloodborne pathogen tests should be repeated after placement in the adoptive home for 6 mo.
 - If sexual abuse is suspected, the child should be tested for gonorrhea, *Chlamydia*, and other sexually transmitted infections. Testing should include any suspected site of abuse, including the mouth and rectum.
 - Tuberculosis
 - PPD should be placed on all at risk newly adopted children, including those with previous BCG immunization before placement with the adoptive family.
 - For all children adopted internationally, testing must be repeated after placement in the adoptive home for 6 mo.
 - Children who are anergic because of chronic malnutrition may have a negative initial PPD. PPD also evaluates children who were exposed to active cases of tuberculosis just before placement.
 - Interpretation of positive test results should be consistent with the exposure history and nutritional status of the child, as per the guidelines in the *Red Book*. Previous BCG immunization before placement should not be considered to be a contraindication to placement of a PPD in any child. A positive PPD should never be assumed to be secondary to the BCG vaccine.
 - Stool pathogens should be screened for any child who previously lived in inadequate housing, another country, or an institution or has diarrhea. Diarrhea need not be present for children to have parasite infections.
 - Ova and parasites: 3 tests for optimal screening (48–72 h between collection of each specimen)
 - If available, antigen testing for *Giardia* and *Cryptosporidia* species should be obtained.
 - Following treatment of stool parasites, repeat stool studies should be performed to ensure eradication of the parasite.
 - Consider stool bacterial culture if diarrhea is present.
- Anemia, metabolic, and nutritional screening
 - Complete blood cell count with red cell indices
 - Routine anemia screening is indicated for all children 6 mo or older, as well as all children adopted internationally.
 - In children with an absolute eosinophil count exceeding 450 cells/mm³ and negative stool ova and parasite examinations, consider serologic testing for *Strongyloides* and *Schistosoma* species for children from certain regions.¹⁵
 - Screening for hemoglobinopathies and blood disorders in children of African, Asian, Hispanic, or Mediterranean ethnicities
 - Sickle cell disease
 - Thalassemia
 - G-6-PD deficiency
 - Blood lead concentration for children up to 6 y of age; older ages if indicated (ie, refugees, at-risk cultural practices)
 - Newborn screening panel (young infants)
 - Rickets screening (calcium, phosphorus, alkaline phosphatase) for children who were institutionalized, have growth delay, or had history of poor vitamin D intake or limited sunlight.
 - Most children are easily treated for this with increased calcium in the diet and a daily multivitamin.
- Testing does not need to be repeated for children adopted from the US foster care system who previously had laboratory studies consistent with the recommendations from the AAP

ART, automated reagin test; BCG, bacille Calmette-Guérin; FTA-ABS, fluorescent treponemal antibody absorption; G-6-PD, glucose-6-phosphate dehydrogenase; MHA-TP, microhemagglutination *Treponema pallidum*; PPD, purified protein derivative; RPR indicates rapid plasma reagin; TPPA, *Treponema pallidum* particle agglutination; VDRL, Venereal Disease Research Laboratory.

acceptable alternative when doubt exists is to reimmunize the child.

Chronic Health Concerns

During the health assessment of an adopted child, health concerns not previously diagnosed may be identified. Following a review of any previous medical testing, it is appropriate to make referrals to pediatric medical subspecialists. The pediatrician should play a key role in coordinating the health care management of adopted children with special health care

needs. Although referral is important, one may take into consideration that the child is adapting to a new home, and parents are adapting to the child. Minimizing the number of referrals or at least planning them carefully is critical to ensure successful adjustment and to encourage the family to establish a medical home for ongoing continuity of care.³⁵

Hearing and Vision Screening

Hearing and vision screening of children is recommended (Table 5). A

child adopted in the newborn period should have an examination of his or her hearing if not performed previously. In many states, routine hearing screenings are performed for all newborn infants. These results should be documented and made a part of the child's permanent medical record. Even if tested in the newborn period, a hearing evaluation should be obtained for any child with a history of recurrent otitis media or developmental delays, including speech delay.^{26,34,35}

TABLE 4 Evaluation and Administration of Immunization Status of Adopted Children

- Infectious diseases (for updates on infectious disease screening, please consult the AAP *Red Book*¹⁷)
 - Hepatitis B
 - Test for HBsAb; if negative, give age-appropriate immunization
 - Diphtheria, pertussis, and tetanus toxoids
 - Immunize as appropriate for age. Serologic testing for antitoxoid antibodies 4 wk after dose 1 if severe local reaction.
 - If previously received ≥ 3 doses, serologic testing for antitoxoid antibody to diphtheria and tetanus toxins before administering additional doses or administer a single dose of diphtheria and tetanus-containing vaccine, followed by serologic testing 1 mo later for antitoxoid antibody.
 - *Haemophilus influenzae* type b (Hib)
 - Age-appropriate immunization
 - If >12 mo of age, serologic testing for Hib immunoglobulin G (IgG) is available
 - Pertussis
 - There is no serologic test routinely available, but may use antibodies to diphtheria or tetanus as a marker that vaccine was previously given.
 - Poliovirus
 - Immunize with inactivated poliovirus vaccine (IPV) per routine schedule
 - An alternative to vaccination would be to perform serologic testing for neutralizing antibody to poliovirus types 1, 2, and 3 or give a single dose of IPV, followed by serologic testing.
 - Measles-Mumps-Rubella (MMR)
 - Immunize with MMR or obtain measles antibody concentration. If positive, give MMR vaccine to protect against mumps and rubella.
 - An alternative would be to perform serologic testing for IgG antibody to vaccine viruses, indicated by the immunization record.
 - Varicella
 - Give age-appropriate immunization if there is not a reliable history of previous disease or serologic evidence of disease by varicella antibody.
 - Pneumococcal
 - Give age-appropriate immunization.
 - If >12 mo of age, serologic testing for IgG for serotypes 7-14

TABLE 5 Other Screening Evaluations

- Hearing
 - Validate newborn screening when available
 - Screen all children if possible, particularly those with risk factors for hearing loss as well as developmental (speech) delays
- Vision
 - Eye examination as appropriate for age
 - Screening for refraction error as of age 3
 - Funduscopic examination for children with birth wt <1500 g
- Dental
 - Referral to dentist for all children 12 mo or older
 - Earlier referral if evidence of dental caries or abuse via the mouth
- Developmental screening/assessment/interventions
 - Timely identification of developmental delays is strongly recommended
 - Risk factors include prematurity, illegal drug and/or alcohol exposure, poor prenatal care, institutionalization
 - Formal referral for all children adopted in the newborn period or beyond with risk factors as listed or other concerns
 - Referral for all children adopted beyond the newborn period with risk factors or concerns about development when appropriate.
 - For children adopted internationally, a speech evaluation within a few weeks of arrival home by a speech therapist fluent in the child's native language is optimal to help reveal gaps in articulation and language processing skills
 - Referrals may be made to the early intervention program for children birth through 35 mo of age
 - Referrals through the school system for children 36 mo and older with establishment of an Individualized Educational Plan (IEP) when appropriate
 - Referral for speech/language, occupational, and physical therapy when indicated
 - Children adopted internationally should be placed in an educational setting with flexible placement based on the child's developmental profile

All children should have an eye examination. Newborn infants should have careful documentation of the red reflex. A funduscopic examination of dilated eyes should be performed by an ophthalmologist for all children with a birth weight <1500 g.³⁶ Older children should have examination for strabismus and for abnormalities of the fundus, eyelids, and extraocular

muscles. Vision screening should be performed for all children 3 years and older.³⁷⁻³⁹

Dental

Any previous dental diagnoses should also be noted, with appropriate referrals to dental specialists. Dental professionals should be informed about previous medical illnesses and

malnutrition, as well as periods in which the child lived in an area of the world with no fluoride in the diet. A dental evaluation, as recommended by the AAP^{37,39} should be performed for all children 12 months or older, as well as younger children with evidence of dental caries, baby bottle tooth decay, or historical risk factors, including abuse via the mouth (Table 5).

Age Determination

For some international adoptees, questions may arise with respect to the child's accurate date of birth. For children younger than 1 year, a difference of weeks or a few months will not be critical in the long term.^{18,31} For older children, age determination may be more important, especially with respect to placement in school and eligibility for special education services.^{18,31} There are no accurate or reliable tests for age determination. Malnutrition and deprivation may affect assessments using standard measurements, including radiographic bone age and dental eruption. Onset of puberty may be advanced as a child's nutritional status rapidly improves. It is usually best to delay changing a birth date until at least 12 months after adoption to allow for catch-up growth, as well as prolonged observation of a child's physical and emotional development.^{28,31}

Developmental Screening

Developmental screening should be performed using validated screening tools; for the internationally adopted child, it may be a very complicated issue (Table 5). Validated screening tools performed shortly after arrival often may be difficult to interpret. The child usually faces a language barrier, and his or her exposure to the types of materials used for testing may be limited. For these children, early scores may not be predictive of later functioning, as seen in studies by Rutter et al.⁴⁰ Several studies have demonstrated significant developmental delays in children as they enter foster care, particularly in speech and language.^{2,5,41–43} Likewise, children adopted internationally nearly always demonstrate delays in at least one area of development, with nearly half of the children having global delays.^{13,44–46} Children adopted internationally may

demonstrate delays in expressive and receptive language that are not solely related to acquisition of a new language.^{13,15,39,47} Although "catch-up" development does occur, studies have shown that many children are at increased risk of long-term consequences of developmental delay, depending on the age of adoption and the length of time spent in an institutional setting.^{40,46}

Mental Health Review

Children adopted from foster care and children adopted from institutions are at an increased risk of mental health disorders, including socioemotional problems.^{4,46} Preplacement factors such as prenatal drug and alcohol exposure, prolonged institutionalization, multiple placements, and previous abuse and neglect contribute significantly to the emotional problems of these children.^{27,40,46} When available, pediatricians should take into consideration any history of mental health diagnoses in members of the birth family, watching a child

carefully with the use of validated screening tests, such as the Pediatric Symptom Checklist,⁴⁸ Brief Infant-Toddler Social Emotional Assessment,⁴⁹ or Ages and Stages Questionnaire: Social-Emotional,⁵⁰ that can be performed in the pediatric office. Appropriate referrals should be made when such a risk presents itself. Although referrals should be performed at the time of placement for children with a history of abuse or neglect, screening for mental health disorders should take place at all medical visits, particularly at the time of regular health assessments (refer to Table 6).

Issues of Adjustment

Adjustment issues should be addressed at the time of placement into the home. Children may be withdrawn, have temper tantrums, be aggressive or defiant, cry inconsolably, or even have autisticlike behavior as they undergo changes in their family placement.¹² Some children may regress in previously obtained skills. Older, internationally adopted children will likely

TABLE 6 Behavioral and Mental Health Recommendations

-
- Review behavior, including past and present concerns
 - Adjustment
 - Fostering of positive relationships
 - Aggressive behavior
 - Hyperactive
 - Impulsivity
 - Internalizing behaviors (withdrawal, anxiety)
 - Sleep issues
 - Feeding issues, including overeating or hoarding food
 - Enuresis
 - Document psychiatric medications used currently or in the past
 - Document any past psychiatric hospitalizations
 - Previous violent behavior or animal cruelty
 - Sexualizing behaviors
 - Sexual promiscuity or acting out
 - Excessive or inappropriate masturbation
 - Substance abuse
 - Tobacco, alcohol, illicit substances
 - Suicide
 - Suicide ideology
 - Previous suicide attempts
 - Children need to be monitored for issues related to loss and grief, attachment disturbances, posttraumatic stress disorder
 - Children may not admit to previous abuse or neglect until they are secure in an adoptive home
 - Even children placed as newborn infants may have issues related to their history of adoption (ie, identity development) that do not necessarily rise to the level of mental health issues
-

encounter frustrating language barriers with their adoptive family.^{12,15} Even if transitions into an adoptive home are gradual, most children experience grief with the change in their caregivers, peers, and home environment.^{12,51} Sleep problems are also common.^{12,51} Difficulties in timing, location, duration, and quality of sleep are typical.¹² Feeding problems may present after adoption. Feeding issues may include overeating, hoarding, or food refusal.¹² Pediatricians need to counsel families about potential adjustment issues and encourage them to look for cues that the child may be overwhelmed and help them to develop strategies to promote strong, healthy attachments within the family unit.⁵²

Kinship-Specific Issues

Children placed with kin should also receive the same comprehensive evaluation as those living in nonrelative placements. This recommendation applies even if the child has had no interruption in the child's medical home before or after placement. Studies have demonstrated that the incidence of chronic medical problems and mental health concerns in children living in kin foster care are similar to those of children living in nonrelative foster care.^{53–55}

Role of Adoption Medical Specialists

Adoption and foster care medicine is an evolving subspecialty within the

field of pediatrics. The AAP Section on Adoption and Foster Care provides a mechanism for obtaining information related to enhancing further training for physicians who care for children who have been adopted.

Financial Considerations

The comprehensive assessment of a newly adopted child requires extensive physician time and commitment. Services can be reimbursed on the basis of type of services provided, time spent, and complexity of care.⁵⁶ Services such as the preplacement consultation may not be covered by most insurance carriers, but the pediatrician should advise the adoptive parent to seek information from the parent's employer about benefits covered through an adoption subsidy plan or flexible-spending account. Children adopted through the foster care system may have continuation of their Medicaid benefits even after the adoption is finalized. Finally, families may be eligible for the federal adoption tax credit to offset some of the adoption-related costs.

CONCLUSIONS

Children placed for adoption are in need of a comprehensive health evaluation to fully address all of their health and developmental needs. This is best accomplished with the establishment of a medical home for these children. The comprehensive evaluation should include a review of the

child's medical history, complete physical examination, and results of necessary diagnostic testing. Important consideration should be given to risks in the child's past, with full attention to infectious diseases and environmental, nutritional, developmental, and mental health issues. Pediatricians play an important role in working with families in identification of children's needs and providing emotional support to help families through the adoption process. Ongoing awareness of the adopted child's history through routine follow-up visits will enable the pediatrician to identify other health issues that may develop and assist families in accessing resources that will help them in the long term.

LEAD AUTHOR

Veronnie F. Jones, MD, PhD, MSPH

COMMITTEE ON EARLY CHILDHOOD, ADOPTION, AND DEPENDENT CARE, 2009–2010

Pamela C. High, MD, Chairperson
Elaine Donoghue, MD
Jill J. Fussell, MD
Mary Margaret Gleason, MD
Paula K. Jaudes, MD
David M. Rubin, MD
Elaine E. Schulte, MD

CONTRIBUTING AUTHORS

Dennis L. Vickers, MD, MPH
Deborah Borchers, MD

STAFF

Mary Crane, PhD, LSW

REFERENCES

- Centers for Disease Control and Prevention. International Adoption. Available at: www.cdc.gov/nceh/lead/tips/adoption.htm. Accessed June 8, 2010
- Chernoff R, Combs-Orme T, Risley-Curtiss C, Heisler A. Assessing the health status of children entering foster care. *Pediatrics*. 1994;93(4):594–601
- Simms MD, Dubowitz H, Szilagyi MA. Health care needs of children in the foster care system. *Pediatrics*. 2000;106(4 Suppl):909–918
- Juffer F, van Izendoorn MH. Behavior problems and mental health referrals of international adoptees: a meta-analysis. *JAMA*. 2005;293(20):2533–2535
- Bramlett MD, Radel LF, Blumberg SJ. The health and well-being of adopted children. *Pediatrics*. 2007;119(Suppl 1):S54–S60
- US Department of State, Office of Children's Issues. Intercountry Adoption. Available at: <http://adoption.state.gov/>. Accessed June 8, 2010

7. Howard CR, John CC. International Travel with Infants and Children: International Adoptions. In: Centers for Disease Control and Prevention. *Traveler's Health (Yellow Book)*. Atlanta, GA: Centers for Disease Control and Prevention; 2010. Available at: <http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-7/international-adoptions.aspx>. Accessed June 8, 2010
8. Dawood F, Serwint JR. International adoption. *Pediatr Rev*. 2008;29(8):292–294
9. Jenista JA, Chapman D. Medical problems of foreign-born adopted children. *Am J Dis Child*. 1987;141(3):298–302
10. Hostetter MK, Iverson S, Dole K, Johnson D. Unsuspected infectious diseases and other medical diagnoses in the evaluation of internationally adopted children. *Pediatrics*. 1989;83(4):559–564
11. Barnett ED. Immunizations and infectious disease screening for internationally adopted children. *Pediatr Clin North Am*. 2005;52(5):1287–1309, vi
12. Miller LC. Immediate behavioral and developmental considerations for internationally adopted children transitioning to families. *Pediatr Clin North Am*. 2005; 52(5):1311–1330, vi–vii
13. Bolton MK, Day D. A systemic evidenced based literature review of medical and developmental issues of international adoptees with emphasis on the need for immediate and thorough medical attention post-adoption. In: Eichhorn DM, Kovar S, eds. *Proceedings: 3rd Annual Symposium: Graduate Research and Scholarly Projects*. Wichita, KS: Wichita State University; 2007: 135–136
14. Sperling R. The primary care physician's role in caring for internationally adopted children. *J Am Osteopath Assoc*. 2001;101 (6):345–346
15. Bledsoe JM, Johnston BD. Preparing families for international adoption. *Pediatr Rev*. 2004;25(7):242–250
16. Davies JK, Bledsoe JM. Prenatal alcohol and drug exposures in adoption. *Pediatr Clin North Am*. 2005;52(5):1369–1393, vii
17. American Academy of Pediatrics, Committee on Infectious Diseases. Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. *Report of the Committee on Infectious Diseases: 2009 Red Book*. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009
18. Mitchell MA, Jenista JA. Health care of the internationally adopted child part 1. Before and at arrival into the adoptive home. *J Pediatr Health Care*. 1997;11(2):51–60
19. Jenista JA. Findings from foreign medical records. *Adoption/Medical News*. 1999;10:1–6
20. Jenista JA. Preadoption review of medical records. *Pediatr Ann*. 2000;29(4):212–215
21. Chambers J. Preadoption opportunities for pediatric providers. *Pediatr Clin North Am*. 2005;52(5):1247–1269, v–vi
22. Siegel DH. Open adoption of infants: adoptive parents' feelings seven years later. *Soc Work*. 2003;48(3):409–419
23. Bryant CA. Nursing the adopted infant. *J Am Board Fam Med*. 2006;19(4):374–379
24. Wittig SL, Spatz DL. Induced lactation: gaining a better understanding. *MCN Am J Matern Child Nurs*. 2008;33(2):76–81, quiz 82–83
25. Stirling J, Jr; Amaya-Jackson L, ; American Academy of Pediatrics, Committee on Child Abuse and Neglect; American Academy of Child and Adolescent Psychiatry; National Center for Child Traumatic Stress. Understanding the behavioral consequences of child abuse. *Pediatrics*. 2008;122(3):667–673
26. American Academy of Pediatrics. *District II, New York State Task Force on Health Care for Children in Foster Care. Fostering Health: Health Care for Children and Adolescents in Foster Care*, 2nd ed. Elk Grove Village, IL: American Academy of Pediatrics, District II, New York State Task Force on Health Care for Children in Foster Care; 2005
27. Szilágyi M. The pediatrician and the child in foster care. *Pediatr Rev*. 1998;19(2):39–50
28. Aronson J. Medical evaluation and infectious considerations on arrival. *Pediatr Ann*. 2000;29(4):218–223
29. Centers for Disease Control and Prevention. *Traveler's Health Topics*. Available at: www.cdc.gov/travel. Accessed June 8, 2010
30. Committee on Early Childhood, Adoption, and Dependent Care American Academy of Pediatrics. Health care of young children in foster care. *Pediatrics*. 2002;109(3):536–541
31. Jenista JA. The immigrant, refugee, or internationally adopted child. *Pediatr Rev*. 2001;22(12):419–429
32. Miller LC, Comfort K, Kely N. Immunization status of internationally adopted children. *Pediatrics*. 2001;108(4):1050–1051
33. American Academy of Pediatrics Council on Children with Disabilities. Care coordination in the medical home: integrating health and related systems of care for children with special health care needs. *Pediatrics*. 2005;116(5):1238–1244
34. Johnson DE. Long-term medical issues in international adoptees. *Pediatr Ann*. 2000; 29(4):234–241
35. Harlor AD, Jr; Bower C, ; Committee on Practice and Ambulatory Medicine; Section on Otolaryngology-Head and Neck Surgery. Hearing assessment in infants and children: recommendations beyond neonatal screening. *Pediatrics*. 2009;124(4):1252–1263
36. Holmström G, Larsson E. Long-term follow-up of visual functions in prematurely born children—a prospective population-based study up to 10 years of age. *J AAPOS*. 2008;12(2):157–162
37. American Academy of Pediatrics, Committee on Practice and Ambulatory Medicine and Bright Futures Steering Committee. Recommendations for preventive pediatric health care. *Pediatrics*. 2007;120(6): 1376
38. Committee on Practice and Ambulatory Medicine, Section on Ophthalmology. American Association of Certified Orthoptists American Association for Pediatric Ophthalmology and Strabismus American Academy of Ophthalmology. Eye examination in infants, children, and young adults by pediatricians. *Pediatrics*. 2003;111(4 Pt 1):902–907
39. American Academy of Pediatrics. Hagan JF Jr, Shaw JS, Duncan P, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. 3rd edition. Elk Grove Village, IL: American Academy of Pediatrics; 2008
40. Rutter M, ; English and Romanian Adoptees (ERA) Study Team. Developmental catch-up, and deficit, following adoption after severe global early privation. *J Child Psychol Psychiatry*. 1998;39(4):465–476
41. Halfon N, Mendonca A, Berkowitz G. Health status of children in foster care. The experience of the Center for the Vulnerable Child. *Arch Pediatr Adolesc Med*. 1995;149 (4):386–392
42. Takayama JI, Wolfe E, Coulter KP. Relationship between reason for placement and medical findings among children in foster care. *Pediatrics*. 1998;101(2):201–207
43. Ringeisen H, Casanueva C, Urato M, Cross T. Special health care needs among children in the child welfare system. *Pediatrics*. 2008;122(1):e232–e241
44. Miller LC, Kiernan MT, Mathers MI, Klein-Gitelman M. Developmental and nutritional status of internationally adopted children. *Arch Pediatr Adolesc Med*. 1995; 149(1):40–44
45. Albers LH, Johnson DE, Hostetter MK, Iverson S, Miller LC. Health of children adopted from the former Soviet Union and Eastern Europe. Comparison with preadoptive medical records. *JAMA*. 1997;278(11):922–924
46. Weitzman C, Albers L. Long-term developmental, behavioral, and attachment outcomes

- after international adoption. *Pediatr Clin North Am*. 2005;52(5):1395–1419, viii
47. Miller LC. Initial assessment of growth, development, and the effects of institutionalization in internationally adopted children. *Pediatr Ann*. 2000;29(4):224–232
 48. Jellinek MS, Murphy JM, Burns BJ. Brief psychosocial screening in outpatient pediatric practice. *J Pediatr*. 1986;109(2):371–378
 49. Briggs-Gowan MJ, Carter AS. Social-emotional screening status in early childhood predicts elementary school outcomes. *Pediatrics*. 2008;121(5):957–962
 50. Squires J, Bricker D, Twombly E. Ages and Stages Questionnaire: Social-Emotional. Baltimore, MD: Brookes Publishing Inc; 2004. Available at: www.brookespublishing.com/store/books/squires-asqse/index.htm. Accessed June 8, 2010
 51. Schulte EE, Springer SH. Health care in the first year after international adoption. *Pediatr Clin North Am*. 2005;52(5):1331–1349, vii
 52. Borchers D, ; American Academy of Pediatrics Committee on Early Childhood, Adoption, and Dependent Care. Families and adoption: the pediatrician's role in supporting communication. *Pediatrics*. 2003;112(6 Pt 1):1437–1441
 53. Dubowitz H, Feigelman S, Zuravin S, Tepper V, Davidson N, Lichenstein R. The physical health of children in kinship care. *Am J Dis Child*. 1992;146(5):603–610
 54. Dubowitz H, Zuravin S, Starr RH, Jr, Feigelman S, Harrington D. Behavior problems of children in kinship care. *J Dev Behav Pediatr*. 1993;14(6):386–393
 55. Feigelman S, Zuravin S, Dubowitz H, Harrington D, Starr RH, Jr, Tepper V. Sources of health care and health needs among children in kinship care. *Arch Pediatr Adolesc Med*. 1995;149(8):882–886
 56. Springer S. Reporting adoption and foster care initial evaluation and management services (online exclusive). *AAP Pediatric Coding Newsletter Online*. Elk Grove Village, IL: American Academy of Pediatrics; May 2011. Available at: <http://coding.aap.org/content.aspx?aid=11510>. Accessed May 5, 2011

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Margaret Gleason, Paula K. Jaudes, David M. Rubin and Elaine E. Schulte
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