CISTM16 Wi-Fi Access

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Medical Considerations in the Internationally Adopted Child

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June 7, 2019

Objectives

1. Describe the medical, developmental, and behavioral issues that are important to consider in the internationally adopted child
2. Understand the physician’s role in preparing the prospective adoptive family (including needed vaccines for family members, preparation for travel, as well as preparing for special needs, adoption arrival issues)
3. Be familiar with the recommended components of the American Academy of Pediatrics’ initial comprehensive medical evaluation
4. Make informed decisions about immunizing a newly adopted child
5. Explain the appropriate medical follow-up and support of adoptees and their families throughout childhood and adolescence

Disclosures

Drs. Miller and Schulte have nothing to disclose.

You’re attending a neighborhood barbeque and friends from across the street approach you because they know you’re an international medicine doctor. They want to adopt a child from overseas because they think the child will be healthier than a domestically adopted newborn, who’s likely to be exposed to opioids.

What do you say?
Who are the Children?

- Orphanage care
- Foster Care
- Prenatal adversity
  - Substance/environmental exposures, malnutrition, stress
- Postnatal adversity
  - Malnutrition, abuse, neglect, abandonment
- Complex special medical needs
  - May or may not have received needed care
- CHILDREN COME WITH A HISTORY

Life in an Orphanage

- Boring
- Lack of individual attention
- Inadequate nutrition
- Infectious disease exposure
- Scheduled routine, with no variation for individual needs

Foster Care

- Generally an improvement from institutional care
- Often involves multiple placement changes
- Inherent separation & loss issues

Epidemiology – International Adoption

- >307,000 children, from >40 countries have entered US since 1990
- 1986-1990 Korea
- 1991-2008 China, Guatemala, Russia, Korea, Ethiopia
- 2008-2016 China, Congo, Ukraine, Korea, Bulgaria
- Recent shift to older children
Number of International Adoptions to the United States – 1995-2016

Country representation - 2016

Short and Long-Term Considerations

- Stress and Trauma

Tolerable Stress

- Tolerable stress occurs when the body’s alert systems are activated to a higher degree
  - loss of a loved one
  - a fire
  - a frightening injury
- Child experiences significant stress, but has support of loving adults
- Adult helps child relax and allows child to recover

Toxic Stress

- Strong, frequent, and/or prolonged adversity that’s not buffered by adequate adult support
- Children who are subjected to physical, sexual, or emotional abuse, chronic neglect, exposure to violence, and/or the burdens of family economic hardship experience toxic stress
- Children may feel that adults are not to be relied on or trusted
- Children experience the world as a dangerous place
- Even fetuses can experience toxic stress

Using the Live Audience Response System

BY INTERNET USING WIFI (preferred)
1. Be sure your mobile device or laptop is connected to Wi-Fi
2. Go to the website shown at the top of the slide:
   www.pollev.com/LincolnRoom
3. Type or tap your response – that’s it!

BY TEXT
1. Join by texting “LincolnRoom” to 22333
2. You will receive a confirmation text
3. Type your answer in text and hit “send” to answer the questions

Children adopted internationally are at increased risk of:
- Developmental delay
- Mental health concerns
- Infectious diseases
- All of the above

Preparing the adoptive family

- Pre-adoption counseling
  - General
  - Special Needs
- Preparation for travel (including vaccines)
- The transition
  - The child and family
  - Medical issues

- ~14,000 waiting families
- 2018: 615 children arrived
Understanding (limitations of) the medical record

Prenatal alcohol exposure

Special needs

Preparation for travel

Risk of infectious diseases

The transition

Growth and developmental delays

"Baggage" from early life experiences

Long-term follow-up needs

Risk of neurobehavioral disorders

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Medical records can be accepted from the child's country of origin

Yes, if the dates look relatively recent

Yes, if the tests look they were done in a "good lab"

It depends on the country

Some results but not others

No, never

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Understanding (limitations of) the medical record

Growth measurements

Photo

Lab results

Hepatitis B

HIV

Syphilis
Limited information, sometimes “unusual”

The child was born to a 17-year-old mother. No father. Mother wrote a written relinquishment.

Diagnoses:
- Hypoxic-ischemic encephalopathy
- Hypoplastic left heart syndrome
- Obstructive sleep apnea
- Cerebral palsy

Birth weight: 2,700 gr, height: 46 cm, head circumference: 32 cm, age: 6 yrs.

At present:
- Weight: 2,600 gr, height: 86 cm, head circumference: 37 cm, chest circumference: 36 cm.

Special needs children in international adoptions are:

- Increasing in absolute number
- Increasing as a proportion of total arrivals
- Arriving with increasingly severe problems
- Not always identified before arrival
- All of the above

Special needs

Any condition that makes it more difficult to find an adoptive family

• Age (>5 yrs)
• Sibling group
• Medical condition

Hague Convention on Intercountry Adoption

USA 25% (2013)
Netherlands 31% (2013)
Sweden “most” (2013)
France 70% (2018)

This doesn’t include special needs diagnosed after arrival

Special needs

Any condition that makes it more difficult to find an adoptive family

• Age (Age >5 yrs)
• Sibling group
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Hague Convention on Intercountry Adoption

USA 25% (2013)
Netherlands 31% (2013)
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Obvious Physical Findings:
Overlooked implications

- Smith-Lemli-Opitz Syndrome (autism, severe developmental delay, many organ malformations)
- Russell-Silver Syndrome (poor growth, renal malformations, GI problems)

The Infernal List!

Sample from 5 page document

<table>
<thead>
<tr>
<th>Condition</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature</td>
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<td></td>
</tr>
<tr>
<td>Undescended testicle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Umbilical hernia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleft lip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleft palate</td>
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<td></td>
</tr>
<tr>
<td>Visual problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strabismus</td>
<td></td>
<td></td>
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<tr>
<td>Deformed ears</td>
<td></td>
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</tr>
<tr>
<td>Heart murmur</td>
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<td>Cardiac anomaly</td>
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<td>UPOD deficiency</td>
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<td>Thalassemia</td>
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<tr>
<td>Other blood problems</td>
<td></td>
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</tr>
<tr>
<td>Hepatitis B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other infection</td>
<td></td>
<td></td>
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<tr>
<td>Malformed hands, legs or feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty moving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior possible abuse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Special needs

**Missed diagnoses**

- Behavioral disturbances
- Attachment disorder
- School or learning problems (ADHD ~2-4x increased risk)

**“Inapparent” special needs**

Various studies 2005-2014

**Risk of infectious diseases**

HEPATITIS B
HEPATITIS A
TUBERCULOSIS
PARASITES
SYPHILIS
HEPATITIS C
HIV

**Infectious disease outbreaks that have been traced to international adoptees as the index case include**

- TB
- Measles
- Hep A
- Hep B
- All of the above

**Preparation for travel**

HEPATITIS B
HEPATITIS A
TUBERCULOSIS
MEASLES
Risk of infectious diseases

Hepatitis A

Adoptee
Traveler
Non-traveling contact
Contact of NTC

43 cases

Preparation for travel

Risk of infectious diseases

Measles Outbreak

15 adoptees
54 families
9 states

Prepared staff
Hotel personnel
Flight attendants & passengers on many flights
Extended family members and family visitors

Preparation for travel

Risk of infectious diseases

Parents and other close contacts: recommended vaccines

Parents also need general travel advice
Accompanying children – vaccines and general safety and health

Preparation for travel

The visa exam

Inadmissibility criteria: communicable disease of public health significance*, inadequate vaccine record, physical or mental disorder with associated harmful behavior, drug abuser or addict

*TB, syphilis, GC, Hansen’s, Quarantinable diseases, or public health emergency of international concern (PHEIC)
Transition behaviors

• Eating
• Sleeping
• Potty
• Play
• Sensory
The transition

Finally, the arrival medical exam!

Wow, he looks great!
And he was already tested for Hepatitis B, HIV, and syphilis in Peru!
Wow, he looks great! And already body tested for Hepatitis B, HIV, and syphilis!

The arrival medical exam

Screening recommendations for new arrivals

- Hepatitis B
- Hepatitis C
- Hepatitis A
- HIV
- VDRL
- Parasites
- TB
- H. pylori
- Vaccine titers

The arrival medical exam

Parasites

- Intestinal
  - 3 samples + EIA for giardia and cryptosporidium
  - Bacterial pathogens if symptomatic
- Malaria screen if from endemic area
- Chagas serology if >12 months old from endemic areas Cent/S America

The arrival medical exam

Screening recommendations for new arrivals

- Hepatitis B
- Hepatitis C
- Hepatitis A
- HIV
- VDRL
- Parasites
- TB
- H. pylori
- Vaccine titers

The arrival medical exam

Lack of arrival screening still common

% NOT tested

- 0%
- 20%
- 40%
- 60%
- 80%
- 100%

27% had NO TESTING done

The arrival medical exam

After 4 years and 6 negative stool tests...
Hepatitis B

- ~4% positive despite negative tests in homeland
- Unsterile needles ~30–75% of injections in developing world
- International Adoptees: ~35% of HBV in young children in USA (CDC)

~90 days seronegative window (range: 60–150 days)

Recent HBV vaccine -> false positive HBsAg

Malnutrition & response to Tuberculin Skin Test (TST)

Use of IGRA

- <2 years of age: use TST
- >2 years of age: IGRA preferred especially if BCG-vaccinated

It’s not advisable to place a tuberculin skin test on a child with evidence of BCG scar.

TST and previous BCG vaccination

- Botswana 70% of children TST negative 3-60 months after BCG [J Int Tbl Lung Dis 3:23, 1999]
- Most BCG-vaccinees with TST>15 mm have true disease [Ped Infect Dis 2:446, 1983]
- 95% of 5 yr olds vaccinated as newborns test negative [Pediatr Infect Dis 23:71, 2004]

Red Book 2018: “…Definitions of a positive TST apply regardless of previous BCG vaccination”
Other reasons for false-negative TST

- Young age
- Immunosuppression
- Recent viral infection (especially measles, varicella, influenza)
- Recent TB infection
- Disseminated TB disease

*Or... forgot to read it*

Missed TB diagnoses

After a negative test at arrival repeat TB test ≥3 mo later. **20% +**

**38/191 IA children had unrecognized Latent TB**

Staat et al. Pediatrics, 2008;122,e7
Recommendations for Pediatric Health Care

The arrival medical exam

[Table]

The arrival medical exam

[Image of a child sitting and a chart]

The arrival medical exam

[Image of a child with a toy]

The arrival medical exam

[Image of a child's back]

The arrival medical exam

[Image of a child's leg]
Variation in syndromes (FAS) in different populations

Janea is a newly adopted 30 month old with cleft lip/palate from China. She had her lip repaired prior to adoption. Parents report that she received “all of her vaccines” prior to arrival. They don’t want her to have any extra shots.
What do you do?

Considerations

• Most countries follow the WHO’s immunization standards
• Quality of vaccine
  • Outdated
  • Improperly stored

Considerations

• Records of immunizations given in orphanages are not necessarily reliable
  • No adult witness
  • Most children have recopied records, not originals
  • May have the wrong child’s name on the records
  • Records of shots given before the child was born
  • Records of vaccines not available in the country of origin

Immunizations

• Immunizations given in community-based health care facilities are usually acceptable
• original records and adequate timing of doses should be verified
• Children with no records, or records which do not appear to be original or accurate, should be re-immunized

But Janea’s parents don’t want her to have any extra shots

But I can’t accept every immunization record...

• Range of evidence
  • Non-protective titers for vaccine-preventable diseases (VPD)*
    • 15.70% (208/1323) for tetanus
    • 10.10% (46/457) for HBV
  • Polio immunity may vary, based on study#
  • HBV protection may vary based on intervals between doses#

#Staat, MA. Vaccine. 2010 Nov;28(50): 7947-7955.
Serologic Testing to Assess immunization status
• Diphtheria, Tetanus
• Measles, Mumps, Rubella
• Varicella
• Polio
• Hep B
• Hep A

Why might Janea lack immunity?
• Reasons for poor immune response:
  • Improper storage
  • Vaccines used beyond the expiration date
  • Improper intervals between doses
  • Malnutrition

Serological testing to assess immunization status of internationally adopted children can be performed for all of the following except:
  a. Tetanus
  b. Varicella
  c. Pneumococcus
  d. Polio

Your 16 yo internationally adopted female patient is traveling to Europe this summer. She received one measles vaccine at 9 months of age in India. She received her second measles vaccine in the US before starting kindergarten. You should:
  a. Tell her to have a good time
  b. Give a MMR
  c. Check a titer
  d. Call the CDC

After successfully immunizing Janea, you send her home and have her follow up in 4-6 weeks. Janea’s parents ask you what they should anticipate in the next month, before they come back and see you.
What do you tell them?

Growth

Catch up growth

- The smaller, the younger – the more catch up in height and weight
- Mediated by recovery of growth hormone secretion
- Not related catch up for head growth
- Slower recovery of head growth is associated with poorer verbal IQ

Growth Delays

Reasons for poor catch up growth include:
- Undiagnosed parasitic infection
- Malabsorption
- Inadequate caloric consumption
- Poor dental hygiene
- a, b, and c
- f. all of the above
Feeding, Sleeping, and Behavior

Feeding

• Most children will eat “anything”
• Older children often hoard food
• A smaller number of children struggle with eating
  - Bottle feeding only
  - Sensory issues - temperature, texture, color

Feeding - Overeaters

• Overeating & hoarding was adaptive in previous circumstances
  - Have never known plenty
  - Have never known satiety - “full” sensation doesn’t mean “stop”
• Allow unlimited access to healthy, age-appropriate foods
  - Must learn to trust that there will be enough
  - Must learn self-regulation of intake

Sleep

• Past experiences often difficult
  - Cold, hungry, wet, in pain
  - Frightening experiences
  - Victimization
  - Witness to violence
• All without the support of a nurturing adult
• No notion of bedtime being warm & cozy

Sleep: Balancing Short & Long-Term Goals

• Short-term goal is to teach child:
  - “You are safe”
  - “When you need us, we will always be here”
• Not the time for “cry it out” techniques
• Think of the child as having newborn emotional needs, despite an older child’s body
Behavior Concerns

- Self-stimulatory behaviors
  - Learned for entertainment & self-comforting
  - Continue when child is tired, stressed, or bored
  - Parents should respond to the underlying need, not the behavior
  - Usually diminishes over time, as child learns to rely on parents
  - May persist at bedtime or other stressful times

- Tantrums
  - May never have learned to regulate own emotions
  - Child often overwhelmed with all of the changes in his life, so the fuse is short
  - Complicated by language delays, learning a second language
  - May be testing once the honeymoon is over

Janea returns in 6 weeks. Her screening labs revealed that she was a little anemic, and she had giardia. You started her on iron supplementation, and treated her with metronidazole. Her repeat stool samples were negative. She’s eating everything in site, despite challenges with her cleft palate – which is scheduled to be repaired in a few weeks.

What do you tell Janea’s parents about anemia and giardia?

Iron deficiency

- 35% IDA in newly adopted Chinese children (Miller, 2000)
- Eastern European adoptees, <24 months
- 25% IDA at one month, 31% w/ G lamblia
- 16% IDA at six month f/u
- Lack of recovery in iron status may be explained
  - degree of IDA
  - Iron demand and use (rapid post-adoption growth rates)
  - G lamblia
- Suggest re-screening all intl adoptees at six months

Janea returns on her 3rd birthday. Her palate repair was a huge success. Her parents are only concerned about her language development. She’s been getting speech therapy for over a year, and she’s not caught up to her peers.
What’s the likelihood of developmental delay?

Developmental Delay

- 106 (67 girls) IA children over a period of 18 months
- China, Korea, Latin America, Eastern Europe, and other Asian countries
- Mean age at adoption was 11 months
- ASQ at 6, 12, and 24 months post-adoption - gross and fine motor, communicative, personal-social, and problem-solving skills
- Demonstrated linear improvement over time in most developmental domains, but children with initially low scores remained significantly lower than other children at the 18-month follow-up
- Communication was most commonly experienced delay initially
- ASQ were unrelated to age at adoption
- Across most domains, children adopted from Eastern Europe showed generally lower scores than children adopted from other birth regions.


Developmental Delay, and More

- National sample of 102,353 children, including 2903 adopted children
- Adopted children are more likely than biological children to have:
  - special health care needs
  - current moderate or severe health problems
  - learning disability, developmental delay or physical impairment, and other mental health difficulties
  - Adopted children are more likely to receive medical/dental care, and have consistent insurance
- All differences remain statistically significant even after adjustments for differences in demographic characteristics and the prevalence of special health care needs

Bramlett MD. Pediatrics. 2007 Feb;119.

Issues particular to cleft lip/palate

- Retrospective review of 151 IA patients with CLP seen 1998 - 2012
- Avg age of 2.3 years, (80.8% Chinese)
- 12.2% (n = 19) with CP had oronasal fistula (ONF) that required repair
- ONF rates for primary repair in US were significantly lower compared to preadoption repairs (P = 0.002)
- 14.8% (n = 21) of all patients had secondary surgeries for velopharyngeal incompetence (VPI)
- Rates of secondary surgery for VPI were also significantly lower for primary repair in US compared to preadoption repairs (P = 0.006)
- Recommended expedited repair of unoperated cleft palates in adoptees older than 18 months


Janea is now 16 years old. She has been relatively physically well throughout her childhood and adolescence. She receives special education services through school, and has recently expressed some suicidal ideation to her parents. She says she’ll “never do anything” but she reports that she is very sad, sleeps a lot, and doesn’t have any friends.

Is Janea a typical teenager, or could it be something else?
Mental Health in IA

- Meta-analysis, 11 studies, 17,919 adoptees and 1 million non-adopted peers
- IA
  - More mental health problems across domains
  - More externalizing difficulties
  - More differences when using parent-report compared to self-report
  - Age at adoption, gender were not significant

The older a child is at the time of adoption, the more likely the child is to have a mental health condition.

A. True
B. False

A year later, following some therapy and medication, Janea reports feeling better. She’s looking forward to graduating from high school and attending community college. She’s asked her parents if they can help her search for her birth mother.

Adoption Identity – When does it happen?

- Compared Korean-born and White US-born adopted adults
- For the Korean-born adults, higher self-esteem, gender (being female), and higher levels of life satisfaction were associated with feeling more comfortable with adoptive identity
- For the white domestically adopted participants, higher life satisfaction and living in a more ethnically homogenous area were associated with feeling more comfortable with adoption identity

Adoption Appraisal

- Initial tests showed that adoptees who either had searched or were currently searching for birth parents reported higher rates of difficulties: poorer mental health, well-being, and self-esteem
- Subsequent analysis indicated that whether someone rated their adoption negatively was a better predictor of poor psychological adjustment than whether they had engaged in a search

Thank You!