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Greetings NJ Pediatricians!

I want to thank our outgoing president, Jeffrey Bienstock for his leadership of the NJAAP and his dedication to all children and the pediatricians throughout New Jersey who care for them. I also extend a heartfelt welcome to all the new chapter officers and members of the Executive Council.

As I assume the presidency, I begin with a commitment to the continued growth of our Chapter and a keen focus on member engagement—outreach to pediatricians and allied health care providers. To begin, we will be expanding the locations of future Executive Council meetings to multiple regions across the state. It is our sincere hope that by bringing these meetings to your “doorstep,” it will make it possible for pediatric professionals who were precluded from attending in the past to get involved—and earn CME credit at the same time. We want to meet you and listen to you so that together, we can continue to ensure and improve the health of children and promote the critical importance of pediatrics.

When you become involved, you will quickly learn that NJAAP has many active committees including: Government Affairs, Practice Management, Adolescent Health, Children with Disabilities, Climate Change and Immigration. Please bring your passion and expertise to these and other committees. Do you have a specific passion? Let NJAAP assist you creating an outlet for expressing that passion and mold it into a platform for advancing change in NJ.

The Chapter is hard at work establishing new pediatric medical subspecialty and pediatric surgical subspecialty committees. This year we held our first Adolescent Medicine Conference under the direction of the Adolescent Health Committee with Susan Brill, MD. The NJAAP School Health Conference was a great success with over 400 attendees. Come experience even one conference and you will be hooked. Please save the date for the NJAAP Annual Conference and Exhibition to be held on Wednesday, May 22, 2019. This conference draws distinguished local, national, and international pediatric experts to NJ. And this is just one example of numerous membership benefits for NJAAP members. Looking for something a bit more entertaining? The Children’s Ball—Spotlight on Children will be held on April 17, 2019. All proceeds benefit NJAAP programs that improve the health, safety, and well-being of all children across the state.

It is now AAP Election season and I encourage all AAP members to vote. Members will be asked to choose the next president-elect candidate: Sara “Sally” H. Goza, M.D., FAAP, or George C. Phillips, M.D., M.B.A., FAAP. The winner will serve as the 2020 AAP president. This year there is an important election for the Chairperson of District III. District III includes New Jersey, Pennsylvania, Delaware, Maryland, West Virginia and Washington, D.C. The District Chairperson serves as an AAP Board Member. The candidates are Margaret “Meg” C. Fisher, M.D., FAAP and David M. Krol, M.D., M.P.H., FAAP. You can find more information about these fine candidates and their position statements from the National AAP Election Center on the AAP website.

Remember, NJAAP is your professional home. Please get involved. Together, we can advance the health and well-being of children and support the pediatricians who care for them.

Sincerely,
Children and families in NJ face many challenges—in turn, pediatric health care teams are presented with new health care needs to address. As pediatricians and other pediatric team members, your expertise and advocacy to keep children safe and healthy, and support their caregivers is essential. NJAAP is your local professional home and a strong voice for children and for the pediatricians caring for them here in our state—together, we will face these challenges. AAP offers national and global resources that we use routinely. What does the early childhood landscape look like in NJ?

New Jersey is home to approximately 950,000 children ages 8 and under (U.S. Census Bureau, 2017) and is one of the most diverse states in the nation. 25% of New Jersey's child population is Hispanic, 63% are white, 15% are African American, and 9% are Asian. Five percent of children in New Jersey are foreign born and in 2016, more than 40% of births in New Jersey were to foreign-born mothers. 3.5% of children in New Jersey households have a disability.

Financially speaking, 34% of these children live in families with incomes falling below 200% of the federal poverty level. Twenty percent of households with children under age 18 utilize public assistance, such as supplemental security income, cash public assistance income, or food stamp/SNAP benefits (U.S. Census Bureau, 2016). In FFY 2016, approximately 230,000 New Jersey residents were estimated eligible for the WIC Program, however, only 65% of those individuals participated (NJ WIC). The numbers accessing key programs to support health are continuing to decline as fear of deportation for children's extended family increase.

While New Jersey has a lower overall rate of infant mortality (4.1 deaths per 1,000 live births; NJ DOH, 2016) compared to the national average, black infant and maternal mortality are issues of critical concern. Compared to their white, Asian, and Hispanic counterparts, black infants are at a significantly greater risk of dying before their first birthday. 9.5% of births in New Jersey are preterm, and the preterm birth rate among black women is 47% higher than the rate among all other women (March of Dimes, 2018). Contributing factors may include a lack of access to appropriate health care, family support, housing and employment stability, and awareness of community and state resources; however, studies show that the root causes of the issue being linked to racism and differentials in healthcare protocol. Addressing black maternal and infant mortality and eliminating health care disparities is a priority for the first lady, Tammy Murphy, Esq., who recently hosted a Health Summit where NJAAP was one of 117 stakeholders, to participate in a robust discussion to collaboratively contribute plans for improving health outcomes for black mothers and infants.

Approximately 74% of children in New Jersey are tested for lead exposure before 3 years of age. Of those tested in 2016, 2.4% of those 6-26 months and 2.8% of those less than 6 years of age tested positive for elevated blood lead levels (≥5 μg/dL) (NJ DOH, 2018). In cities like Newark, where exceedances of lead have been detected in drinking water due to the failure of corrosion control measures, this is of particular concern for the city's youngest residents who are formula fed.

Though research demonstrates that two years of preschool offers more benefits than one, three-year-olds in New Jersey are underserved with only a 39% share of students served across all districts. In 2016-2017, there were 100,195 three and four-year olds eligible for full-day preschool in all New Jersey school districts, however, only 49% were enrolled in full-day, high-quality preschool programs. Barriers to enrollment include a lack of facilities, the State's lack of funding for Preschool Expansion, and poor recruitment efforts (Education Law Center, 2018). NJAAP has been a key stakeholder in promoting health in early childhood and advocating for Pre-K Our Way Expansion (www.prekourway.org)—funds now have been designated to expand the program considerably. As a Chapter, we have been working with members to strengthen Advanced Primary Care (formerly Medical Homes) through quality improvement programs designed to strengthen a team approach to primary care that promotes early identification of health issues and linkage to services. A few focus areas include:

- Improving access to quality comprehensive pediatric healthcare in a medical home. According to Advocates for Children in New Jersey Baby's Count and Kid Count data, we know all but 3% of newborns have an insurance card; however, due to the challenges of low Medicaid payments it’s clear an insurance card doesn’t guarantee access to care.
- Supporting early identification of mental and behavioral health issues through the Pediatric Psychiatry Collaborative (PPC) Mental Health QI Initiative. Previously, when pediatricians screened for mental health and identified a child in need of further psychiatric evaluation, they felt access was dismal with long waits for care. Today there are 9 statewide hubs with 500+ pediatricians registered and benefiting from the system of care. There is data on over 110K screens and over 5000 children who have been referred to the PPC Hubs. (See page4)
- Providing support for pediatricians to strengthen screening, early identification, prevention care management and linkages with community connections including screening for social determinants of health (see publication insert, results of 9 practices who have integrated ACEs screening moved from 0% screening to 100% in 6 months of dedicated efforts). As you can see, this is only the tip of the ice. Join us as we will roll up our sleeves and continue our work in 2019.

Nelson Mandela

“There can be no keener revelation of a society's soul than the way in which it treats its children”
Medical Director’s Column

Steven Kairys, MD, MPH, FAAP
Chairman, Department of Pediatrics
Jersey Shore University Medical Center
Medical Director, K. Hovnanian Children’s Hospital

The Child Abuse Conundrums

Most pediatricians do not see child abuse as an issue among their families. Most believe that abuse is carried out by others: those living in poverty, parents taking drugs and parents with mental health issues. And although those attributes are indeed risk factors, they do not identify the majority of families who daily perpetrate abuse and neglect upon their children. They do not identify those caregivers who terrorize and belittle or those who take out their own anger and distress in the privacy of the family so that the child is uncertain when the next volcano will erupt or for how long. More than any lasting physical injuries, it is the shame, the loss of self-esteem, the fear, the need for constant hypervigilance to ensure the environment is safe that is so overwhelming and toxic.

These same doctors often acquiesce to the biases of their patients and families—those who refuse to immunize or the ones who turn to the internet for treatments and interventions that have no data demonstrating effectiveness. And yet, these doctors follow a similar biased pathway toward the children in their care: believing only the deranged or drugged minority would abuse children.

Felliti and Anda were the first to show that the damage of child abuse far outlasts childhood and that the damage to adult survivors of childhood abuse is much more destructive than anyone had foreseen. Many of these adult survivors were the children of middle class families.

Their Adverse Childhood Experiences (ACE) survey of adults coming in for regular primary care at the Kaiser Permanente clinics in California documented serious unexpected outcomes. Their list of adverse childhood experiences included a variety of forms of abuse and also: domestic violence, parental substance abuse, maternal depression, complicated divorce and parental incarceration.

The prevalence was so large, upwards of 30% of adults screened reported having been physically abused as children. The percentages were equally high among all other forms of ACE’s. More than 25% of the Kaiser patients in the study had two or more such adverse experiences as children. Particularly unexpected results considering these adults were middle class and all had health insurance and jobs with reasonable incomes. They were not the cohorts that pediatricians would normally have red flagged as being at high risk for abuse.

The damage was not only depression and anxiety and substance abuse, it broadened to include physical health with high incidences of heart disease, liver disease, and emphysema. So much so that an adult with four or more adverse childhood events had only a 10% chance of living past the age of 65.

ACE’s were seen by Felleti as the most important predictor of adult disease and disability.

Which returns us to the many children living lives of quiet desperation, undetected and unprotected, in what one psychiatrist called ‘god’s little concentration camps’—because child abuse is chronic, repetitive, relentless and victimizes children in all walks of life and income brackets.

The Adverse Childhood Experience Screening tool used by Felliti and Anda is now being presented to pediatricians as an effective tool for increasing awareness in the medical home of the family environment and the extent of such experiences in the lives of the parents and children being cared for by the practice.

The screening tool adds a dimension to the family history not regularly elicited. However, it also mandates that the pediatrician have responses to the findings including trusted referral sources and office-based support for the family.

NJAAP has been steadfast in working to develop such a network of supports and responses for the pediatric Medical Home. The SPPACES (Strengthening Pediatric Partners Adverse Childhood Experiences program offers pediatricians MOC Part 4 credit for engaging in this important work. We encourage you to participate. For more information or to register, contact Program Director, Aldina Hovde at ahovde@njaap.org
Abstract

Non-accidental, inflicted injuries in children may present as bruises, burns, fractures, head and abdominal trauma, and can be difficult to differentiate from accidental injuries. The role of primary pediatricians is twofold: to not miss a diagnosis of abuse by maintaining a healthy suspicion, and to not wrongfully diagnose abuse and add unwanted stress to the child and the family. In this article, we will highlight when primary pediatricians must suspect physical abuse by understanding the common differences between accidental and non-accidental injuries.

Introduction

Child maltreatment can take place in various forms ranging from neglect, both emotional and physical, to sexual abuse. Physical abuse is the second most common form of abuse after neglect, accounting for 18.2% of the reported abuse cases. Physical abuse in children usually manifests as bruises, fractures, head and abdominal trauma and burns, and can often be hard to differentiate whether the cause is inflicted or accidental injury. Over 600,000 children in the United States were victims of child abuse and neglect in 2016, most of them were under the age of 3, and it caused 1,750 child fatalities across the nation. Unfortunately, 78% of the time, the perpetrators were one or both of the child's parents. As children are often too young or otherwise incapable of reporting abuse themselves, over 64% of the time a professional, such as a teacher or a physician was the one to report, while the rest was reported by family, friends or neighbors.

Definition of accident vs intentional event

Accidental injuries are defined as those that are caused as a result of a child’s normal course of events, while non-accidental injuries are defined as those that were inflicted by a caretaker. 89.4% of the time injuries in the pediatric group are unintentional, whereas 10.6% were reported as non-accidental. However, when it comes to mortality from these injuries, children are more likely to die from non-accidental (mortality rate of 12.7%) than accidental injuries (mortality rate of 2.6%).

Questions to ask to help separate the accidental from the inflicted injury

It is often not easy to get a definite answer of whether abuse has taken place while taking history, as most victims of abuse and neglect are preverbal children. Pediatricians tend to rely on the parent/ primary caregiver for history, even though they are unlikely to confess to being the perpetrator. Older children and adolescents, if they are the victim, may also hide abusive history for fear of separation from abuser, repercussions, or feelings of loyalty towards the abuser.

Regardless, primary pediatricians must conduct a regular assessment of standard history including special emphasis on the following questions:

- Age of the patient
- Is the degree of injury compatible with victim's developmental stage and capabilities?
- Does history about incident change with different encounters, or when asked by other family members?
- Does the child have characteristic that may increase the risk of abuse (developmental delays, difficult temperament, behavioral issues, etc)?
- Did the caregiver delay seeking medical attention for the injuries?
- Was there a non-family member who witnessed the event?
- What was the demeanor of the caretaker during the interview (passive, defensive, hostile)?
- Behavior pattern of the child
- Discipline strategies used on the child
- Social situation of the family —history of drug use or alcohol —relationship of adults in the home to the child —family dynamics, discord among family members, domestic violence —acute/ overwhelming stressful circumstances
- History of underlying medical conditions such as clotting disorders, bone diseases, genetic diseases, any childhood deaths

Accidental injury—what does the literature tell us

Accidental injuries are the most common cause of death among children from 0-19 years of age, resulting in over 12,000 deaths in the United States each year. Motor vehicle accidents account for the greatest percentage of these fatalities from accidental trauma and falls are the largest cause of non-fatal injury.
Falls from Heights

Every year about 2.8 million children visit the emergency department due to injuries from a fall, where 50% of them are under the age of one. Table 1 summarizes the common types of falls and their resultant injury and fatalities reported in various studies.

Table 1

<table>
<thead>
<tr>
<th>Fall from height</th>
<th>Study</th>
<th>Resultant injury</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;4 ft</td>
<td>Helfer⁵</td>
<td>not serious-no serious head injuries or morbidity</td>
<td>none</td>
</tr>
<tr>
<td>&gt;10 ft</td>
<td>Williams⁷</td>
<td>14% with no injuries; 73% with bruises, simple fractures; 13% ICU admission—(These are falls greater than 10 feet—higher than bunk bed falls)</td>
<td>0.9% fatality at 70 ft</td>
</tr>
<tr>
<td>&gt;10 ft</td>
<td>Musemeche⁸</td>
<td>55.7% with head trauma; 2.8% subdural hemorrhage; 7.6% epidural hemorrhage</td>
<td>none</td>
</tr>
<tr>
<td>2nd story building</td>
<td>Lehman⁹</td>
<td>40% skull fracture; 33% extremity fracture; 17% facial fracture; 10% neurological injury (even falls from a second story rarely resulted in major head trauma)</td>
<td>none</td>
</tr>
<tr>
<td>5-6 stories building</td>
<td>Barlow¹⁰</td>
<td>severe brain injury</td>
<td>22.9% died</td>
</tr>
<tr>
<td>high chair</td>
<td>Mayr¹¹</td>
<td>16% skull fractures; concussion 14%; Limb fracture 2% laceration 69% (no major head trauma morbidity)</td>
<td>none</td>
</tr>
<tr>
<td>straddle</td>
<td>Waltzman¹²</td>
<td>long bone fractures; 5% closed head injury without intracranial bleeding</td>
<td>none</td>
</tr>
<tr>
<td>stairway</td>
<td>Joffe¹³</td>
<td>13% major soft tissue injury, concussion; 90% minor or no injury (Again no evidence or serious morbidity)</td>
<td>none</td>
</tr>
</tbody>
</table>

Thus the take home message is that falls from the usual household events—beds, chairs, etc. can cause some trauma and even fractures, but they are rarely the cause of major head or abdominal trauma.

Other Trauma Data

Table 2 below shows a summary of studies showing other common accidental cause of injuries and their implication.

Table 2

<table>
<thead>
<tr>
<th>Accident type</th>
<th>Study</th>
<th>Common age group</th>
<th>Resultant Injury</th>
<th>Fatalities</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>suffocation</td>
<td>Drago¹⁴</td>
<td>0-3 years</td>
<td>68% head injuries; 44% multiple injuries</td>
<td>2.70%</td>
<td>Wedging in bed was the most common cause, followed by oronasal obstruction</td>
</tr>
<tr>
<td>hit by falling object</td>
<td>DiScala¹⁵</td>
<td></td>
<td>9.5% permanent vegetative stage</td>
<td>38%</td>
<td>Often neglect and lack of safety</td>
</tr>
<tr>
<td>drowning</td>
<td>Lavelle¹⁶</td>
<td>0-2 years</td>
<td>9% severe head and thorax injury; 7% severe orthopedic and spine injury; 17% thoracic; 13% abdominal; 1% pelvic</td>
<td>15.90%</td>
<td>Abuse is suspected when police or EMS was not involved, reckless or alcohol or drug related accident, when child restraint was not used</td>
</tr>
<tr>
<td>motor vehicle accident</td>
<td>Brown JK¹⁷</td>
<td>0-18 years</td>
<td>severing head and thoracic</td>
<td>15.90%</td>
<td></td>
</tr>
</tbody>
</table>

Bruise characteristics that should increase concern for inflicted injury

Non-accidental bruises may leave a pattern due to the objects used for inflicting them. Some such patterns include: handprints, linear bruises representing blows with sticks, straps, or electric cables. Bites can leave an oval imprint of teeth with distance between the canines over 2.5 cm, in case the inflictor is an adult. Central hematoma in a bite mark represents suction.

Another very important red flag of intentional abuse are multiple bruises at different ages of healing. Injuries in protected areas should also raise suspicion, such as those behind the ear flaps caused by violent ear pulling, inside oral mucosa and labial frenulum due to forced insertion of objects in the mouth. Tiny patchy skin abrasions around the mouth and nose can indicate forced obstruction to prevent the child from screaming or crying. In all cases of bleeding, clotting disorders, and skin disorders must first be ruled out.²¹

Dating a bruise during a physical examination

After a mechanical injury, extravasation of blood under the skin leads to formation of bruise. The erythrocytes are broken down to bilirubin, and hemosiderin, thus giving different colors to the bruise. Recent studies have shown that dating the age of bruise by its color, however, can be unreliable, but some conclusions can be made.²²

- Red is common to bruise of all age, not only fresh ones.
When are fractures more likely inflicted vs accidental?

Stories that raise suspicion about non-accidental injuries are any fatal or severely injured case reported due to child falling from low height, or onto furniture, or floor. Delays in seeking care are also very concerning. Stories that the child turned blue, or was stuck in an object, and was shaken to revive are suspicious of abuse. Unexpectedly found dead child or sudden seizure activity must be thoroughly evaluated. Stories stating that the injury happened during tripping while carrying the child, when child was left alone for a short time, or during resuscitative efforts are suspicious. Common abusive stories can include that another sibling is blamed for the injury inflicted, the child fell down the stairs, or the child fell from a couch or bed.4

On physical exam, non-accidental skeletal injuries tend to have some characteristics, such as multiple fractures, or any fracture in an infant under the age of 12 months. A child presenting with multiple rib fractures has 7 in 10 chances of being physically abused. Long bone fractures in infants not yet ambulatory are 70% likely to be abusive. Fractures in mid-shaft of humerus, unlike supracondylar fractures (more often due to falls), are more likely to be inflicted. Regarding skull fractures, it is often hard to differentiate between abuse and non-abuse, as they are common in both cases, however skull fracture in an infant, or complex skull fractures suggest abuse.19 In general, metaphyseal lesions, fractures in posterior ribs, scapula, and spinous process have a high non-accidental specificity, whereas clavicular, long bone shaft, and linear or simple skull fractures carry a low specificity to abusive injuries.20

Physical characteristics of various injuries

Most injury in pediatric age is accidental, making it often hard to differentiate. However, a suspicion should be raised whenever any injury to a young, pre-ambulatory infant is present, such as skin bruises, fractures, and mouth, intracranial or abdominal injury. Injuries to multiple organ systems and in various stages of healing also suggest abuse. Injuries with a pattern or those present on non-bony or other unusual anatomical locations, including torso, ears, face, neck, or upper arms are highly likely to be non-accidental.1 Table 3 below summarizes the common differences between accidental and non-accidental injuries in terms of their presentation.

Table 3

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>Likely to be Accidental</th>
<th>Likely to be Non-accidental</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Lesion</td>
<td>on shins, bony prominence, lower arms, forehead, under the chin</td>
<td>on trunk, upper anterior legs, upper arms, sides of face, the ear, the neck, the genitalia and buttocks</td>
<td>slap mark, imprint of object, bite mark, frenulum tears are highly suspicious</td>
</tr>
<tr>
<td>Head Injuries</td>
<td>cephalohematoma, simple skull fracture, and epidural hemorrhage</td>
<td>SDH, SAH, cerebral edema, bilateral black eyes, complicated fractures, large retinal hemorrhages</td>
<td>evidence of other associated injuries suggest abuse—falls that cause a simple fracture can often be accompanied by a small subdural that does not cause signs of brain injury</td>
</tr>
<tr>
<td>Visceral Injuries</td>
<td>solid organ injury following a high-speed collision</td>
<td>fracture of left lobe of liver, hematoma in duodenum, jejunum injury, pancreatic injury, mesenteric tears, hypopharyngeal perforations, scrotal hematoma</td>
<td>solid organ injury in absence of high speed collision suggest blunt abdominal trauma</td>
</tr>
<tr>
<td>Skeletal Injuries</td>
<td>clavicular, long bone, simple linear skull fracture</td>
<td>metaphyseal lesion, posterior rib, scapular, spinous process, sternal fractures, fractures at different stages</td>
<td>type of fracture does not help much in discriminating. Spiral fractures are not diagnostic of abuse. Toddler fracture is an accidental fracture, usually spiral, of tibia or femur from falling down</td>
</tr>
<tr>
<td>Bites</td>
<td>marks to second molar, involving both arches, and &lt;2.5 cm suggest child bite</td>
<td>canine to canine; 2.5 to 3.5 cm between the canines, involves 1 arch</td>
<td>Measurement of the lesion often helpful to differentiate adult from child bites</td>
</tr>
</tbody>
</table>

continued on next page
What are the characteristics of burns that increase concern for inflicted injury?

Thermal injuries can be accidental in most cases, but can be non-accidental too, or happen because of lack of supervision. They are classified scalds when skin is contacted with hot fluids, and as burns when the skin contacts with hot object or open flame. A symmetrical scald on both extremities happens due to immersion in hot water, mostly with abusive intentions. They are also often sharply bordered with less splash marks. Abusive burn injuries are typically localized in buttocks, back, outer part of arms and legs, and may leave an impression of the hot object used for inflicting the burn, such as iron or hot spoon.25

What are the characteristics of head injury that should increase concern?

Head trauma is the leading cause of mortality due to abuse, and the most common sustained injury in non-accidental trauma. Delayed presentation to hospital setting after injury and inaccurate or changing history by the caregiver are common in abusive head trauma. Studies show that presence of subdural hematoma is 4 times more likely to be found in non-accidental head trauma compared to accidental ones, especially in children up to 2 years of age. Absence of skull fracture, accompanied by underlying head injury findings suggests abuse. In fact, a child less than 2 years of age presenting with subdural hematoma, CNS symptoms, and rib fractures is considered highly specific for non-accidental.24

Abdominal trauma characteristics

Abdominal injuries due to abuse are rare but carry a significantly higher mortality rate than accidental abdominal injuries. They are not routinely investigated in children suspected to be victims of abuse. In one study, all cases of established abuse were brought to the hospital with over a mean delay of 3.5 days after the incidence, whereas high-velocity accidental cases were brought in for care early. Usually a vague or fabricated history is provided by the caregiver in case of abuse, such as falling down from the stairs, or off the crib. The most common abusive hollow abdominal organ injured was the duodenum as hematoma or obstruction. On the other hand, solid organs injuries such as in liver and spleen, can occur equally in accidents and abuse. Pancreatic injuries are also more commonly seen in motor vehicle collision, while less frequently in abuse.25 Screen for abdominal trauma in all cases of significant abuse. There is very often no bruising to the abdominal area.

Reporting suspected child abuse in New Jersey

When a primary care pediatrician suspects a child was abused after a careful history, physical exam, and/or necessary labs or imaging, they need to call the 24-hour DCP&P hotline at 1-877-625-2872 and have the basic information of the child in hand, such as the name, age, current location and condition of the child, name and address of parent or caregiver, the reason why they suspect abuse, and note any immediate danger, if present.26 The parent should be aware of the report and the pediatrician should not make judgements about who caused the abuse, only that there are real concerns and the role of the pediatrician is to make sure the child stays safe.

If the physician believes the child needs emergency medical care, they should be sent to the emergency department for stabilization, labs, and imaging. Other than the law enforcement and DCP&P, hospitals have statutory authority to keep children in emergency protective custody, if the physician believes the child is unsafe for going home. The police must be informed if the child or a staff member is in immediate danger, the child was injured with a weapon, a child was sexually abused, the child was injured by a non-caregiver, or a clear chain of custody of the evidence is needed to maintain integrity of the evidence for future court proceedings.26

References:


continued on page 10

CME Quiz

1. Fewer than 500,000 U.S. children were victims of child abuse and neglect in 2016
   a. True       b. False
2. Which of the following questions should be included in a standard history to determine whether an injury is inflicted or accidental?
   a. Did the caregiver delay seeking medical attention for the injuries?
   b. Is the degree of injury compatible with victim’s developmental stage and capabilities?
   c. What discipline strategies are used by the caregiver?
   d. All the above.
3. A majority of injuries in children less than one year are non-accidental
   a. True       b. False
4. Which of the following fractures is most likely to be inflicted?
   a. Mid shaft fracture of the humerus
   b. Spiral fracture of the tibia
   c. Metaphyseal fracture of tibia
5. A 3-month old male baby has a swelling in the scalp, a parietal skull fracture and a small subdural hematoma beneath the fracture. The mother said he fell off the bed while mother went to tend to another sibling. This is most likely
   a. Abusive injury
   b. Accidental injury
6. A 4-year old girl comes with her father for her shots. She is noted to have several large bruises on her lower legs and arms of different colors. When asked about them, the father said she often has bruises sometimes with no history of trauma. What is the next best step?
   a. Report to child protection
   b. Order an extremity x ray
   c. Check for coagulopathies
   d. Refer to genetics department

CME Quiz continued on page 11
CME Quiz continued from page 10

7. What is size of a bite mark measuring from canine to canine likely to be inflicted by an adult?
   a. 2 cm
   b. 1.9 cm
   c. 2.4 cm
   d. 3.1 cm

8. A chest x-ray of a 3-month-old baby shows multiple fractures of various healing stages, and her arm has two circular burn marks of around 1 cm, which number should be called?
   a. 911
   b. 311
   c. 8776252872

9. Which of the following is the most common sustained injury in non-accidental trauma?
   a. Spiral fractures
   b. Abdominal trauma
   c. Head trauma

10. Hospitals have statutory authority to keep children in emergency protective custody, if the physician believes the child will be in an unsafe environment at home.
    a. True
    b. False

CME Instructions
Read the CME-designated article and answer the Fall 2018 issue, quiz questions above. Print your name and phone number and mail or fax this form within six months from the date of issue to: NJAAP CME Quiz, 50 Millstone Road, Building 200, Suite 130, East Windsor, NJ 08520. Fax: 609.842.0015

NAME ____________________________ PHONE ____________________________

EMAIL ____________________________

Submitter must answer 8 of the 10 questions correctly to qualify for CME credit.

Accreditation Statement:
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Medical Society of New Jersey through the joint providership of Atlantic Health System and the American Academy of Pediatrics, New Jersey Chapter. Atlantic Health System designates this live activity for a maximum of 1.0 MA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Atlantic Health System is accredited by the Medical Society of New Jersey to provide continuing medical education for physicians.

NEW JERSEY PEDIATRICS Fall/Winter 2018 11
CME Activity

Brandon D. Brown, M.D. Chief Resident PL-3 The Children’s Hospital at Saint Peter’s University Hospital
Susan Brill, M.D., FSAM, FAAP, Chief of Adolescent Medicine, The Children’s Hospital at Saint Peter’s University Hospital, Clinical Associate Professor of Pediatrics, Rutgers Robert Wood Johnson Medical School

Introduction

In providing for an adolescent patient population, health care providers will frequently be serving patients who identify as homosexual, bisexual, transgendered, queer, gender queer or otherwise struggling with issues related to their sexual orientation, gender identity or gender expression. Amidst these struggles, these vulnerable youth are confronted with significant health disparities related to their sexual, physical and mental well-being. The growing data over the past several decades has seen significant advances in available competent care education for providers of adolescent sexual and gender minorities. Many providers, however, continue to lack the appropriate awareness and exposure to adequately provide such care.

Historical Insight

In 1974, the American Psychiatric Association abandoned the classification of homosexuality as a mental disorder in favor of alternate choice of sexual expression based on data indicating deleterious, potentially devastating, social consequences of designating homosexuality as pathology.1 By 1983, the American Academy of Pediatrics (AAP) issued its first statement on homosexuality and adolescence promoting pediatricians to obtain a sexual history in a non-judgmental manner, asserting that it is the pediatrician’s responsibility to provide health care for all adolescents.2 At that time, the policy statement included evaluation whether adolescents desired to sustain or alter their current sexual preference. Referral for psychotherapeutic support was suggested for adolescents who wished to pursue heterosexual re-orientation. The policy was revised in 1993 and 2004 to further remove the pathologic undertones of homosexuality as well as encourage education of pediatricians to provide non-judgmental care to all sexual minority groups. This included adolescents struggling with gender identity, expression, sexuality and sexual behaviors. In 2016, the section on LGBT Health & Wellness obtained official status in the Academy and began hosting annual education programs at the National Conference & Exhibition.3 This year the AAP issued its most recent statement on diversity and inclusion emphasizing the Academy’s core values of promoting diversity, fostering inclusion and advancing health equity for all.4

Physician Competency & Patient Disparity

The care of all pediatric patients should be provided by physicians educated and willing to promote wellness in all aspects of care. The physician-patient relationship in adolescents relies on partnering with youth to promote physical and emotional well-being in an environment which fosters trust and inclusivity while encouraging and respecting diversity.

Health Care Disparities in Sexual and Gender

In order to foster competent care, we must first understand the LGBTQ population density and diversity and be mindful of the unique challenges faced by this community which often translate to disparities in the quality of patient care provided or the interpretation of the care received. The adolescent patient population may all face challenges to the healthy development of personal identity. LGBTQ youth, however, confronted with pervasive societal homophobia and heterosexism, face profound challenges in the development of sexual and gender identities. Through the struggle of establishing identity, LGBTQ youth are at increased risk of negative physical and mental health outcomes. It has been well established at this point that LGBTQ youth are at significant risk of poor physical and mental health related to substance and alcohol abuse, depression, suicidalit, victimization, violence, and eating disorders. LGBTQ youth have been shown to have earlier sexual exposure, increased high-risk sexual behaviors, increased risk of sexually transmitted infections (STIs), and unplanned pregnancy.3,5,6

While sexual minority youth are susceptible to certain vulnerabilities, it is important to note that these youth are remarkably resilient and most emerge as well-adjusted adults with strong sexual and personal identities. Pediatricians play a role in partnering with patients as a guide through adolescence offering information for healthy expressions of sexuality, assistance for the development of identities, and promoting physical, mental and sexual well-being. All clinicians should aim to develop a competent understanding of the physical and sexual health challenges faced by gender minority youth.

Definitions

Sexual orientation An individual’s pattern of physical and emotional arousal toward other persons. Sexual orientation is a label provided by the patient which is fluid and should not be used by the provider as an assumption that it has remained constant over time.

Sexual minority Patients who self-label their sexual orientation to any group apart from heterosexual including but not limited to lesbian, gay, bisexual, transgender, questioning, or queer.

Sexual behavior Many adolescents do not define themselves as a member of a sexual minority. Thus, providers must be comfortable in providing care for those men having sex with men (MSM) and women having sex with women (WSW) who do not self-label as a sexual minority.

Gender expression The outward expression of being male or female according to what society perceives as gender normal. Gender non-conforming individuals do not follow society’s ideas of how they should act according to gender roles and norms.

continued on next page
Minority Youth

Physical and Mental Health Disparities

It is difficult to accurately estimate the number of LGBTQ individuals and their health care needs given that the majority of state and national surveys lack questions pertaining to gender and sexual identity. The Centers for Disease Control and Prevention (CDC) has begun to add questions to the Youth Risk Behavior Survey (YRBS) and have expanded most recently to include questions about transgender and questioning/queer youth. At this time, all available information comes from self-report data.

Tobacco, Alcohol, and Substance Use

Increased psychosocial stressors affecting sexual minority youth are associated with increased risk of tobacco, alcohol, and drug use when compared to heterosexual counterparts. The YRBS is a national, school-based survey conducted annually by CDC. The YRBS 2017 data for high school students (9th-12th grade) revealed significantly higher rates of tobacco use amongst sexual minority groups with 40.8% of gay or lesbian and 42% of bisexual respondents having ever tried cigarette smoking compared to 28.2% of heterosexual respondents. When evaluating alcohol use, there was a somewhat increased risk of ever having alcohol (gay or lesbian, 64.3%; bisexual, 74.5%, and heterosexual, 60.9%) as well as having first drink before age 13 (gay or lesbian, 16.6%; bisexual, 23.1%; heterosexual, 14.9%). More profound risks were observed for the following: (1) ever having used cocaine (gay/lesbian, 9.5%; bisexual, 7.6%; heterosexual, 4.2%), (2) ever having used ecstasy (gay/lesbian, 8.8%; bisexual, 8.8%; heterosexual, 3.3%), and (3) ever having used heroin (gay/lesbian, 5.1%; bisexual, 3.1%; heterosexual, 1.1%).

Substance use and abuse may be associated with other risk behaviors including unprotected sexual intercourse. Given the detriments of addiction and dependence on tobacco, alcohol and illicit substances conveys to the physical and mental health of the patient, it is of vital importance for the pediatrician to advocate for safe and responsible behaviors. Being aware of the increased risks faced by sexual minority youth should allow for pediatricians to utilize appropriate screening of these patients.

Depression and Suicidality

Some of the most striking disparities that exist for sexual minority youth are those related to depression and suicidality. When sexual minority youth "come out" and acknowledge their identity or sexuality to friends and family, stigmatization and rejection are common. As youth struggle with acceptance, difficulties with self-esteem and self-identity put the adolescent at significant risk of depression and suicidality.

Positive school environments such as those with zero tolerance for bullying have been shown to be protective with lower rates of depression and suicidality among sexual minority youth.

Victimization, Violence, and Bullying

Disclosure of gender or sexual identity may put sexual minority youth at increased risk of bullying, physical violence and sexual victimization. Bullying may range from verbal harassment to physical or sexual violence. Outside of direct interaction, sexual minority youth are at increased risk of electronic bullying at any time. A 2011 national survey of 8584 lesbian, gay, bisexual, and transgender students age 13-20 reported 82% were verbally harassed in the past year, 64% felt unsafe at school because of their sexual orientation with 32% having missed at least one day of school in the past month for this reason. The national YRBS in 2017 demonstrated 28% of gay/lesbian and 34.4% of bisexual youth have been bullied on school property while 17.1% of heterosexual youth reported being the victim of school bullying. Some of the most troubling disparities involve the increased risk for sexual minority youth to be the victim of sexual violence. 21.2% of gay/lesbian and 22.1% of bisexual youth reported having undesired, forced sexual intercourse as compared to 5.4% of heterosexual responders.
Societal homophobia and heterosexism create a direct conflict for sexual minority youth while indirectly creating barriers to receiving help in home, school, community and even patient settings. A study conducted in Washington, DC demonstrated 90% of sexual minority youth surveyed had reservations about reporting sexual orientation to their clinicians. It is the role of the adolescent provider to create an inclusive, non-judgmental, and supportive environment which inspires youth to feel safe and provide opportunities for LGBTQ youth to confidentially disclose experiences. Victimization puts LGBTQ youth at increased risk of depression, suicidality, sexual risk behaviors, and substance use. Detailed history allows for the pediatrician to assist sexual minority adolescents with a multitude of complex struggles and provide national and local resources in an effort to minimize the deleterious psychosocial effects of such challenging interpersonal conflicts.

Sexual Health Disparities

Sexual minority youth are more likely to engage in high-risk sexual behaviors; this is likely due to an amalgamation of contributing psychosocial factors. Societal homophobia, heterosexism, family rejection, and victimization increase the risk of depression, anxiety, suicidality, substance use, and homelessness which may all contribute to LGBTQ youth engaging in risky sexual behaviors. Combined surveys from 2005 and 2007 of 6317 high school students from Massachusetts demonstrated 25% of gay/lesbian and 15% of bisexual youth self-reported as homeless, compared with 3% of heterosexual youth. It has been estimated that between 25-40% of homeless youth are sexual and/or gender minorities. Studies have demonstrated sexual minority youth having earlier age for sexual debut, increased number of sexual partners, and decreased or ineffective use of condoms.

Sexual minority females are assumed to be at less risk of pregnancy; however, this is often an erroneous assumption. Females who self-label as homosexual may have sex with males as they develop their sexual identity, may engage in sex with males to maintain a heterosexual society-label, or may have coerced or forced sexual contact. Several surveys have reported higher rates of teen pregnancy among sexual minority youth relative to their heterosexual peers. Sexual orientation is a self-label which may change over time. Given the increase in high-risk sexual behaviors, it is the role of the pediatrician to discuss sexual and gender identity and behaviors at every visit to adequately convey useful health information to the adolescent patient. Moreover, the pediatrician should be prepared to offer basic and universal information in regard to healthy, positive, and safe sexual practices to all patients irrespective of reported sexual or gender identity.

Conclusion

Adolescent health care providers must be willing and capable of promoting well-being in all aspects of care. Despite improvements in acceptance and understanding in society, homophobia and heterosexism continue to pose an enormous threat to the development of healthy sexual and gender identities for LGBTQ youth, with significant risk posed to their general and mental well-being. Through competent care provided in a nurturing environment, the pediatrician can partner with patients to encourage diversity and allow these remarkable children to attain their highest potential. By creating offices with an environment of inclusivity and offering care, assistance, and resources in a non-judgmental manner with the knowledge of the risks associated with sexual and gender minorities, we can help decrease these disparities and empower these patients for their futures.

References


CME Quiz

1. The greatest disparities that exist for gender and sexual minority youth are those related to depression and suicidality.
   a. True  b. False

2. Gender expression refers to which of the following:
   a. An individual’s pattern of physical and emotional arousal toward other persons
   b. The intestinal sense of one’s self as being male, female, another gender, without gender or any combination.
   c. The outward expression of being male or female according to what society perceives as gender normal. Gender non-confirming individuals do not follow society’s ideas of how they should act according to gender roles and norms.
   d. Dislike or distress regarding one’s own gender identity which may be in conflict with one’s own natal gender and/or the outward manifestations of gender.

3. Which of the following statements is not true?
   a. It is the role of the pediatrician to discuss sexual and gender identity and behaviors at every visit to convey useful health information to the adolescent patient.
   b. Homophobia and heterosexism continue to pose less of a threat to the development of healthy sexual and gender identities for LGBTQ youth.
   c. When sexual minority youth “come out” and acknowledge their identity or sexuality to friends and family, stigmatization and rejection are common.
   d. Sexual minority youth face increased risk of tobacco, alcohol, and drug use as compared to heterosexual counterparts.

4. What year did AAP issue its most recent statement on diversity and inclusion?
   a. 2015
   b. 2016
   c. 2017
   d. 2018

CME Quiz continued on page 16
5. LGBTQ youth are at significant risk of __________.
   a. negative physical outcomes
   b. poor mental health
   c. eating disorders
   d. All of the above

6. According to YBRS 2017 data, within the last 1 year, 41.4% of gay or lesbian respondents and __________ of bisexual respondents have seriously considered attempting suicide. *(Fill in blank.)*
   a. 42%
   b. 66%
   c. 49.6%
   d. 34.4%

7. Sexual minority youth are more likely to engage in high-risk sexual behaviors.
   a. True
   b. False

8. Patients who self-label their sexual orientation to any group apart from heterosexual including but not limited to lesbian, gay, bisexual, transgender, questioning or queer refers to which of the following terms:
   a. Sexual orientation
   b. Gender identity
   c. Sexual minority
   d. Gender expression

9. One study found that 80% of sexual minority youth surveyed had reservations about reporting sexual orientation to their clinicians.
   a. True
   b. False

10. Decreasing disparities for gender and sexual minority youth involves:
    a. Physicians partnering with youth to promote physical and mental well being.
    b. Creating a nurturing office environment that fosters trust and inclusivity
    c. Understanding LGBTQ population and the health risks faced by this community
    d. All of the above
This year has brought some exciting developments for child care in New Jersey. Our chapter was one of five chosen nationally to participate in a safety and injury prevention initiative (targeted to child care) developed by the AAP. The project seeks to distribute a curriculum focused on improving health and safety in child child care. The program was developed by emergency physician, Andrew Hashikawa, MD, FAAP.

Why is safety in child care an important issue for pediatricians? When it comes to public health, we tend to focus on diseases. The fact is, however, that injuries are the #1 killer of children in the United States. More than 9,000 children die each year from injuries, which is equal to approximately 150 school buses loaded with kids. Furthermore, among young children, 10% of those injuries occur in the early care and education setting. And most of these injuries are both predictable and preventable.

Many children spend more awake hours in the child care setting than they do at home, and children depend on caregivers to provide a safe environment. As pediatricians, we have a unique opportunity to educate all caregivers for children, whether they are parents, in-home care providers, or child care professionals. The benefit of educating child care professionals is that they can then help us to educate the parents who come to their center. Many centers also take the complementary step of educating the children in their care about safety issues, who then go home and share the information with their parents.

To kick off the Safety and Injury Prevention in Child Care project, three members of our project team: NJAAP CEO, Fran Gallagher, myself, and our resident participant, Olivia Nwankwo, MD, traveled to Chicago for the grant implementation meeting, led by Dr. Hashikawa. We all really enjoyed being able to experience in-person the beautiful new AAP national headquarters in Itasca, IL. Subsequently, in May, I conducted a workshop at the NJ Association for the Education of Young Children conference in East Rutherford. Following this, the bulk of the project involved the presentation of a series of Lunch and Learn webinars on various topics addressing safety and injury prevention in child care including: playground safety, burn prevention, transportation and helmet safety, and medication safety/ poison prevention. Facilitated by NJAAP staff member, Jake Sathmary, the webinars were conducted through June and July, and are now available to anyone interested on the NJAAP website (www.njaap.org). Additionally, Jake arranged for NJAAP to become an NJ Workforce Registry-approved Training Agency, meaning that child care personnel can accrue official training hours through the NJAAP programs. This is an exciting development because this designation can be used to sustain and expand the NJAAP role in child care education beyond the original grant.

Looking to the future, NJAAP is currently partnering with Johnson & Johnson's Safe Kids NJ to examine how we might adapt the safety and injury prevention curriculum for use by parent groups. I am also keeping an eye on government affairs and hoping the new state administration will keep its promise to make universal Pre-K a reality for NJ. I cannot think of a more exciting development for early childhood in our state, so stay tuned-and fingers crossed.

“If a disease were killing our children in the proportions that injuries are, people would be outraged and demand that this killer be stopped.”?
—C. Everett Koop, MD, Former US Surgeon General

“I don't work within the early care setting anymore, however I will be sharing these presentations with my coworkers who do”
—Daisy Linares

“The curriculum that I viewed today was very encompassing of all the safety measures that come with playground and helmet safety, I would recommend it to any early care provider”
—Judi Connor, RN
Protect the Microbiome: A Literature Review of the Association between the Use of Acid-Suppressive Medication in Infancy and the Development of Allergic Diseases in Childhood

Gabriele Hunter, DO
PGY-1, Goryeb Children's Hospital
Joel R. Rosh, MD, FAAP, Director Pediatric Gastroenterology
Vice Chair, Clinical Development and Research Affairs, Goryeb Children's Hospital

Abstract:

The use of acid-suppressive medications to treat gastroesophageal reflux in infants has become a common practice among pediatric care providers. Emerging evidence about the effects of acid-suppressive medications on the human microbiome combined with the lack of data showing efficacy for such interventions challenge this practice. In this literature review, we discuss gastroesophageal reflux in infants and the new pediatric gastroesophageal reflux clinical practice guidelines published in 2018. Furthermore, we highlight the evidence regarding the use of acid-suppressive medications in infancy and the associated risk of developing allergic diseases in childhood. This association provokes discussion regarding the common practice of utilizing pharmacological therapy for gastroesophageal reflux in infants.

Gastroesophageal reflux (GER) is the physiologic passage of gastric contents from the stomach into the esophagus with or without regurgitation. This process occurs commonly in healthy infants during the first year of life. In infancy, irritability and crying are also common behaviors. The combination of gastroesophageal reflux and irritability creates a picture of distress for parents as well as healthcare professionals.

It is important to distinguish between GER and gastroesophageal reflux disease (GERD). GERD is gastroesophageal reflux associated with complications such as failure to thrive, hematemesis, or esophagitis. It seems that this distinction is often blurred and therefore, many infants are placed on acid-suppressive medications without true underlying pathology. In 2018, the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN) and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) released clinical practice guidelines to establish updated recommendations for treating GER and GERD in infants and children.

The guidelines discuss the differentiating factors between GER and GERD. Symptoms of failure to thrive, feeding refusal, dystonic neck posturing, hematemesis, wheezing, and stridor are associated with GERD. The presence of these symptoms should prompt healthcare professionals to consider GERD over GER. The authors analyze the use of antacids, proton pump inhibitors (PPIs) and histamine-2 receptor antagonists (H2RAs) in the treatment of GER and GERD based on the published evidence. The clinical guideline strongly recommends against the use of PPI or H2RA for crying, irritability, or visible regurgitation in otherwise healthy infants. In infants and children who have endoscopic evidence of erosive esophagitis due to GERD, the authors do recommend acid-suppressive therapy with PPIs receiving the strongest recommendation in this setting. From these recommendations, it can be concluded that healthy infants with symptoms of GER should not be automatically placed on acid-suppressive therapy.

In incorporating these guidelines into clinical practice, is it informative to look at the actual data regarding the potential efficacy of acid suppressive therapy in infants with presumed GERD? There have been several studies looking at this specific population. In one placebo-controlled, double-blinded study, 162 infants were randomized to either a treatment group with lansoprazole or to a placebo group. GERD was defined by symptoms of crying, fussing, or irritability during or within 1 hour of feeding despite 1 week of non-pharmacologic therapy. The infants were treated over a 4-week period. Efficacy was measured with daily diaries documenting crying episodes after feeding. This study concluded that there was no difference in efficacy between lansoprazole and placebo in treating infants with a clinical diagnosis of GERD. The authors also found that severe adverse events such as lower respiratory tract infections occurred more frequently with lansoprazole than with placebo. This evidence highlights the importance of avoiding the use of drugs that are non-efficacious and potentially harmful in infants.

Another double-blinded placebo-controlled study investigated the efficacy of omeprazole in 30 infants with GER. All infants had symptoms of vomiting and irritability; however, the difference in this study was that the subjects underwent upper gastrointestinal endoscopy with biopsies taken from lower esophagus followed by 24-hour pH monitoring. Efficacy was measured by reflux index, which is the percentage of total recording time with a pH <4, and visual irritability documented by parents. Interestingly, the study demonstrated a significant reduction in the reflux index in the infants taking omeprazole. However, no differences were seen among the crying and irritability measures, suggesting a non-causal association between GER and irritability. Over time, the infants in both groups had improvements in their irritability. This evidence suggests that irritable infants with GER should not be placed on PPIs without an underlying diagnosis of esophagitis. Furthermore, crying and irritability are self-limiting and improve over time in infancy.

continued on next page
In addition to assessing the efficacy of acid-suppressive medications, consideration of the safety of these treatments in infancy is critical. Adverse effects such as respiratory tract infections, fever, and diarrhea have all been associated with acid-suppressive medications. Recent research has established a connection between the use of acid suppressive agents and disruption of the human microbiome leading to the development of allergic diseases in children. The human gut is populated with up to 100 trillion microbes, which contain an estimated 150-fold more genes than are located in the human genome.1 These microbes play an important role in maintaining physiologic homeostasis in the gut. The microbial colonization specifically plays a role in regulation of the innate lymphoid cells and the adaptive immune systems via T cells.2 When there is dysbiosis in the microbiota, immune tolerance is affected and subsequently the host becomes more susceptible to allergic and auto-inflammatory responses.2

Emerging evidence suggests that changes in the microbiota from acid-suppressive medications influence the development of allergic diseases. Pepsin is the main enzyme in the gut that breaks down proteins and requires an acidic environment to be activated.3 Acid-suppressive medications elevate the gastric pH. When the pH is increased, digestion and gastric proteolysis is impaired and intact proteins are permitted to travel to the small intestine.4 In the small intestine, sensitization occurs and causes production of IgE mediated food allergy.4 A recently published experiment looked at the effect of antacid medications on digestion in eight-week-old mice.5 Caviar and parvalbumin, a major fish allergen, were fed to the mice without antacids and then in combination with antacid therapy. The outcomes of digestion and allergic responses were measured using digestion assays, skin prick tests, and IgE levels.5 The authors discovered that caviar and parvalbumin were degraded immediately in the setting of no antacid therapy. Interestingly, when antacids were introduced in combination, the pH was increased to 5.0 and the parvalbumin was no longer digested. In addition, IgE levels were increased and skin prick tests resulted positive in response to caviar in those mice exposed to antacid therapy.5 This study supports the idea that proteins normally digested at the natural pH of the gut will remain undigested in the setting of acid-suppressive medications. These undigested proteins mimic food allergens and in response, the body mounts an IgE mediated response to the respective allergen.5

This experimental evidence linking anti-acid therapy to allergic responses is bolstered by clinical evidence. A retrospective cohort study analyzed 792,130 children to investigate the exposure to antacids in infancy and its correlation to the development of asthma and allergic diseases in childhood.6 Children included in the study were prescribed an outpatient PPI or H2RA prior to 6 months of age.6 Allergic disease was the main outcome defined as the presence of food allergy, anaphylaxis, asthma, atopic dermatitis, allergic rhinitis, allergic conjunctivitis, urticarial, contact dermatitis, or medication allergy.6 These variables were evaluated via outpatient and inpatient EMR review for each patient after 6 months of age.6 Each allergic disease, except for seafood allergy, illustrated a significantly increased risk in those children who received either an H2RA or PPI during infancy.6 An additional retrospective study used a large national insurance database to identify the development of food allergies in 4,724 children 0-18 years of age diagnosed with GERD and treated with anti-acid agents.7 The study compared these children to a matched group of 4,724 controls with GERD who were not treated with acid suppression and 4,724 controls without GER.7 Food allergy was measured by insurance claims with a food allergy diagnosis code during 12 months of follow-up after study initiation.7 Results exhibited a two-fold increase in the development of food allergy in GERD patients on acid-suppressive medications after 1 year of treatment.7 Both of these clinical studies support the correlation between acid suppression and the development of allergic diseases.

The current practice among many pediatric care providers is to place infants on acid-suppressive medications for the treatment of fussiness or spitting up without an underlying pathology. The new guidelines argue against the use of anti-acid agents for irritability or regurgitation in otherwise healthy infants. In support of these guidelines, there is little evidence to prove the efficacy of acid-suppressive therapy in this setting. In fact, emerging evidence develops a stronger stance for adverse outcomes, specifically development of allergic diseases. Clinicians should be encouraged to protect the microbiome and avoid introducing medications that alter it with out clear evidence of efficacy.

continued on page 20
References:


OCD? Did you check for STREP?

Children with PANDAS/PANS have an abrupt and dramatic onset of OCD or Restrictive Eating Disorder plus 2 comorbid symptoms of:

- Anxiety
- Deterioration in school performance
- Emotional lability/Rages
- Depression
- Behavioral regression
- Sensory or motor abnormalities
- Sleep disturbances
- Urinary frequency or enuresis

Accepting patients who have private health insurance, and also have Medicaid as secondary insurance, is beneficial to providers and families of children with special healthcare needs. Medicaid often has benefits that are more generous than employer sponsored health plans due to the EPDST (Early, Periodic, Screening, Diagnostic, and Treatment) provision.

Some pediatricians may be concerned that they will not be able to receive the full payment from the patient’s health insurer if the child has Medicaid that is secondary to private health insurance. Pediatric providers need to be informed that they will receive the usual payment from the private health insurer—without any penalty because the patient also has Medicaid.

Even if a provider is a non-participating provider with Medicaid, there are options if the child has private coverage. The provider may choose to bill Medicaid as an out-of-network secondary plan, which also decreases financial burden on families. However, as long as the provider’s office has informed the family in writing before the service is rendered, the provider may balance bill the patient the remainder not covered by private insurance. The only exception is if the patient is dually eligible for Medicare/Medicaid.

The NJ Administrative Code 10:74-8.7 (§ 10:74-8.7) states that the provider may bill if:

“iii. The provider does not participate in the aforementioned programs...3. The beneficiary is informed in writing before the service is rendered...[and] agrees in writing before the service is rendered to pay for all or part of the provider’s charges;”

This is further explained in the NJ Department of Human Services consumer publication “When You have Medicaid and other Insurance.” It states:

“COVERAGE RESPONSIBILITY

You [families] may also be billed for services if the following criteria exist:

1—The provider does not participate with the Medicaid Health Plan, either generally or for that service;

AND

2—You are informed in writing before the service is rendered that either A, B or C above exists and you voluntarily agree in writing before…”

It is reiterated that for consumers with both private coverage and Medicaid, “If your provider is in your other health insurance network, but NOT your Medicaid health plan network, you may be responsible for a portion of the payment.”

Some children with special needs have Medicaid as secondary insurance and this would eliminate barriers of access to care. In addition, the child with special healthcare needs may get more comprehensive care utilizing Medicaid as secondary, resulting in better health outcomes.

Resources:

NJ Administrative Code TITLE 10. HUMAN SERVICES
CHAPTER 74. MANAGED HEALTH CARE SERVICES FOR MEDICAID AND NJ FAMILYCARE BENEFICIARIES
https://www.state.nj.us/humanservices/providers/rulefees/regs/NJAC%2010%2074%20Managed%20Health%20Care%20Services%20for%20Medicaid%20and%20NJ%20FamilyCare%20Beneficiaries.pdf

NJ Department of Human Services “When You have Medicaid and Other Insurance”
www.state.nj.us/humanservices/dmahs/home/Medicaid_TPL_Coverage_Guide.pdf

Lauren Agoratus, M.A. is the State Coordinator of Family Voices NJ housed at the SPAN Parent Advocacy Network at http://www.spanadvocacy.org/content/family-family-health-information-center-family-voices-nj.
Integrating preventive oral health into pediatric primary care practices has been a long-standing priority for the New Jersey Chapter, American Academy of Pediatrics (NJAAP) as signified by its 7-year long inclusion in the Chapter's Children's Agenda. Results from a comprehensive needs assessment conducted by NJAAP through the New Jersey Dental Health Care Coordinator (NJ DHCC) program piloted in Essex and Mercer Counties during 2018, demonstrates some promising outcomes.

The structure of the NJ DHCC pilot program is based and further built upon best-practice recommendations from *The Oral Health Delivery Framework* model that provides details on how to integrate pediatric oral health into the Patient-Centered Medical Home (PCMH). The program supports the American Academy of Pediatrics best practice standards to provide preventive oral health services as part of pediatric well visits and support families in identifying a dental home for their children by age one.

The NJ DHCC program engages and encourages pediatricians to: increase screening for early signs of oral diseases, carry out risk assessment for implementation of preventive measures, and identify and refer patients to dental homes. With funding from the Healthcare Foundation of NJ, a Dental Coordinator was co-located in three Essex County pediatric practices to mentor and support the office staff in integrating preventive oral health strategies into daily work flow. Strategies include building a dental referral network, providing patient education and assisting with oral health claims processing. Additional aims included ensuring pediatric patients are linked to dentists who are qualified to manage their routine and/or complex oral health conditions, increasing access to preventive oral health care and improving patient oral health outcomes. The Dental Coordinator initially assessed practices for readiness for change. Then, using Quality Improvement methodology, helped to incrementally integrate oral health activities into their daily practice work-flow. Sustainability of the NJ DHCC pilot program efforts was ensured by providing ongoing assistance to practices in navigating through health insurance systems to successfully receive payments for oral health screenings and topical fluoride applications done in the pediatrician’s office.

Data was collected via random monthly chart abstractions by pediatric practices in Essex County for well visits in children aged six months to six years. While data collection is ongoing, a preliminary three month data analysis shows that more than 300 children received topical fluoride treatment at the pediatric offices and were referred to participating pediatric dentists. When compared to baseline data collected prior to program inception, preliminary data shows a 12% (73% to 85%) increase in children receiving caries risk assessments at the pediatrician’s office during well visits; 16% increase (27% to 43%) in children receiving topical fluoride treatments and 16% more (23% to 39%) referrals being made to a pediatric dentist. One of the practices implemented a bi-directional communication tool and successfully received responses from dentists for 75% of children referred. See Figure 2.
NJAAP anticipates an overall increase in these rates over the course of the project’s remaining six-months. Continued support and technical assistance from the NJ DHCC will further guide practices in implementing oral health protocols to improve patient outcomes. Using quality improvement methodology and data collection through random chart abstraction, practices will enhance their ability to use data to make informed decisions about oral health protocols and strategies for successful implementation specific to their practice.

Early results indicate that NJ DHCC pilot program has been successful in helping pediatric practices incorporate preventive oral health services into their daily work-flow. NJAAP anticipates that NJ DHCC will assist many more pediatric practices in integrating preventive oral health as an essential component of the pediatric well visit with the goal of improving health outcomes for Children in NJ.

Reference


NJAAP is applying to ABP for approval to conduct a NJ DHCC MOC Part 4 program in Essex and Middlesex Counties in early 2019. Please contact Oral Health Program Director, Juliana David at jdavid@njaap.org
Overview of Duchenne Muscular Dystrophy and Current Therapeutic Management

Danielle Gordon, MD, Jahannaz Dastgir, DO
Goryeb Children's Hospital, Morristown, NJ

Keywords: Duchenne muscular dystrophy, genetics, therapies
Abbreviations: AAV adeno-virus vector, ACEI Angiotensin-converting enzyme inhibitor, ARB Angiotensin-II receptor blocker, AON Antisense oligonucleotide, BMD Becker muscular dystrophy, CK Creatine kinase, DMD Duchene muscular dystrophy, FVC Forced vital capacity, PCP primary care practitioner, PDE5i phosphodiesterase-5-inhibitor

Abstract
Muscular dystrophy is a condition that develops due to mutations in a gene producing a protein that is integral to the muscle membrane (sarcolemma). There are many types of muscular dystrophy that are transmitted as autosomal dominant, recessive, or x-linked and present at different stages in life, but the most common in young boys is Duchenne muscular dystrophy (DMD). This X-linked condition was primarily managed with supportive care in the past, but over the last decade, therapeutics moved from experiments on mouse models, to clinical trials, and now an FDA approved drug. The goal of this article is to provide an overview of how Duchenne muscular dystrophy impacts patients. It will also update medical practitioners on outpatient and inpatient management needs and discuss exciting new therapeutic options.

Introduction
Duchenne muscular dystrophy (DMD) is a muscular degenerative disease that affects young males. It clinically presents between ages 3-5 years of age and caused by a mutation in the dystrophin protein located on an X-chromosome carrying the dystrophin gene. The dystrophin gene is the third largest human gene with 79 exons. Mutations occur as deletions or duplications of one or more exons that results in loss of the dystrophin protein. Remaining mutations are caused by insertions/duplications, point mutations, splice site mutations, or smaller deletions. These may be maternally inherited or occur spontaneously. Out-of-frame mutations are the most common and exhibit the most severe phenotype with complete loss of the dystrophin protein. However, in-frame mutations produce a partially functional protein which manifests as a less severe phenotype known as Becker muscular dystrophy (BMD).

Dystrophin is a cytoskeletal protein in the muscle membrane. Disruption of this complex increases muscle membrane fragility during contraction when an influx of calcium activates pro-inflammatory cytokines, triggers tissue ischemia and oxidative stress, which subsequently results in muscle degeneration. The clinical parallel of this process includes loss of function, upper extremity weakness, often debilitating scoliosis, respiratory failure and cardiomyopathy. Life expectancy is reduced with ambulation, upper extremity weakness, often debilitating scoliosis, chronic respiratory insufficiency. Gastrointestinal complications may include constipation, heartburn, dysphagia.3 Respiratory and cardiac complications are the major causes of mortality and morbidity. Chronic respiratory insufficiency develops from progressive restrictive lung disease due to muscle weakness and progressive scoliosis. Cardiac manifestations include progressive dilated cardiomyopathy and rarely arrhythmias which can lead to cardiac failure if not proactively managed.

Image 1. DMD gene with 79 exons

Clinical Manifestations
DMD presents in early childhood with initial symptoms of weakness, frequent falls, difficulty walking, and/or difficulty rising from the floor (Gowers’ sign). Physical examination often reveals proximal muscle weakness, waddling (Trendelenburg) gait, and calf hypertrophy. If left untreated, DMD leads to progressive motor deterioration and loss of ambulation by ages 11-13.

DMD primarily affects skeletal and cardiac muscle; however, the disease impacts all aspects of the body. Musculoskeletal manifestations include diffuse joint contractures, scoliosis, and vertebral and long-bone fractures due to osteoporosis. Dystrophin expression in the brain varies depending on the genetic mutation. The intellectual disabilities are static with an average IQ of 85.3 Comorbidities of pervasive development disorder, attention deficit disorder and obsessive-compulsive disorder may also present. Endocrinological complications of DMD and its treatment with steroids often lead to impaired growth, pubertal delay, obesity, and adrenal insufficiency. Gastrointestinal complications may include constipation, nutritional deficiencies, and in later stages, dysphagia. Respiratory and cardiac complications are the major causes of mortality and morbidity. Chronic respiratory insufficiency develops from progressive restrictive lung disease due to muscle weakness and progressive scoliosis. Cardiac manifestations include progressive dilated cardiomyopathy and rarely arrhythmias which can lead to cardiac failure if not proactively managed.

Diagnosis
The diagnosis of DMD is often determined through a compilation of history and physical examination findings which prompt the astute primary care physician (PCP) to test for a creatine kinase (CK) level. A CK level obtained after 2 weeks of life can act as a surrogate to a newborn screen for this condition, and levels are often markedly elevated, ranging 10,000-50,000 U/L (average normal CK is < 200 U/L). Some children also present with elevated liver enzyme values often noted in the setting of a viral illness, prompting additional work-up. Liver enzymes (AST and ALT) are falsely elevated in the setting of DMD. To avoid misdiagnosis and unnecessary liver biopsy, all clinicians are encouraged to check a CK level when liver enzymes are elevated. Of note, GGT is not falsely elevated in DMD, so that may also serve as a differentiating lab value.

continued on next page
If a CK level is elevated, genetic testing is the next confirmatory step. Referral to a neuromuscular specialist or geneticist is recommended at this point. Genetic testing involves assays that scan all 79 exons to predict what type of mutation exists and whether it disrupts or preserves the reading frame. Henceforth, please refer to clinicaltrials.gov for additional information.

Current and Emerging Therapies

Glucocorticoid Therapy

Glucocorticoids are currently the main therapy for DMD. Daily oral prednisone (0.75mg/kg/day) or deflazacort (0.9mg/kg/day) are recommended to start before motor decline. Clinical studies demonstrated that glucocorticoids decrease overall mortality by improving muscle strength, prolonging ambulation, and reducing cardiopulmonary function decline. Chronic use requires close monitoring as there are numerous side effects such as cushingoid symptoms, cataract formation, pubertal delay, obesity, and vertebral and long bone fractures. Deflazacort, previously acquired from abroad, is now the only steroid FDA approved for use in DMD. It is distributed under the name Emflaza.

Clinical trials involving other steroids / analogues (Vamorolone and cosyntropin) are underway. For this and all research drugs mentioned henceforth, please refer to clinicaltrials.gov for additional information.

Genetic Therapies

Another FDA approved drug as treatment for DMD is Exondys 51. This is a synthetic antisense oligonucleotide (AON) delivered weekly through IV therapy that functions to "skip" a single exon in the dystrophin gene and turn an out-of-frame mutation into a less severe in-frame mutation to produce a partially functioning dystrophin protein. The drug is only approved for exon 51, but other exons are currently being studied. The goal of this therapy is to change DMD into a milder phenotype like BMD.

Adeno-associated virus vectors (AAV) mediated gene therapy is also currently being investigated as a treatment for DMD. The DMD gene is large which complicates total gene replacement; however, human trials are ongoing to investigate the effects of deleting selective gene regions and replacing them with a micro-dystrophin with aide from AAV. These vectors introduce a smaller, functional copy of dystrophin that will localize in the muscle membrane and bolster its structural integrity. Nonsense mutations, which account for a minority of mutations in DMD, generate stop codons that prematurely terminate protein translation and result in a non-functioning protein. Translarna (Ataluren) is an oral medication, currently in human trials, that increases dystrophin expression by suppressing these mutations and allowing for an innate gene editing process to take over. This process produces a full-length dystrophin protein and thus improves motor function.

Genome editing is a newer therapeutic strategy for DMD treatment. It restores point mutations and deletions along the DMD gene by removing or reframing exons and inserting short, palindromic sequences called CAS9/CRISPR. This technology has shown functional recovery and reversal of dystrophic changes to skeletal and cardiac muscle fibers in muscular dystrophy models of mice (aka “mdx”). Human clinical trials have not yet been performed.

Muscle Growth and Repair Therapies

Myostatin is a protein produced and released by myocytes to inhibit muscle cell growth and differentiation. Inhibition of myostatin leads to increased size and number of muscle fibers and mass. Mdx mouse models have shown reduced fibrosis and adipose tissue replacement when treated with myostatin inhibitors. Follistatin is a protein that inhibits myostatin activity. It may be upregulated by activating histone deacetylase inhibitors, such as Givinostat. Human trials are underway to test safety and clinical benefit of myostatin inhibitors.

Table 1. Current and Emerging Therapies

| Glucocorticoids | Dexamethasone/Prednisone | Improve muscle strength |
| Myostatin inhibitors | | Prolong ambulation |
| | | Decrease mortality rate |
| | | Decrease scoliosis risk |
| | | Reduce cardiopulmonary function decline |
| | | Side effects: delayed puberty, cushingoid, obesity, increase vertebral/long bone fractures, cataracts, adrenal insufficiency |
| Dystrophin gene replacement using adeno-virus vectors | Exondys51: FDA approved drug that skips exon 51 |
| | Exon skipping | Skips specific exons to restore reading frame |
| | | Produces partially functional dystrophin protein |
| | | Exondys51: FDA approved drug that skips exon 51 |
| | | Prevent recognition of stop codons |
| | | Produces full-length modified dystrophin protein |
| | | Translarna |
| | | Restores mutations points by reframing/removing exons |
| | | Insert palindromic sequences via adeno-virus vectors, CAS9/CRISPR |
| | | Shorter, partially functioning dystrophin protein |
| TGF-beta: increases cell growth, proliferation, and differentiation, increases deposition of extracellular matrix proteins resulting in muscle fibrosis |
| Losartan and monoclonal antibody being studied for efficacy against TGF-beta blockade |

TGF-beta is member of the growth factor family where it controls cell growth, proliferation, and differentiation. It also controls the fibrotic pathway where chronic tissue inflammation and injury leads to excessive deposition of extracellular matrix proteins, leading to muscle fibrosis. TGF-beta is seen to be elevated in muscular dystrophies. The use of Losartan and a monoclonal antibody are currently being studied as therapies to block TGF-beta and inhibit muscle fibrosis.

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Symptomatic Management

Cardiovascular management

Cardiovascular complications, such as dilated cardiomyopathy and arrhythmias, are some of the leading causes of mortality and morbidity in patients with DMD. Cardiomyopathy manifests at varying ages due to multiple factors; thus, it is essential to involve a cardiologist early in diagnosis and maintain regular cardiac assessments while managing DMD. Initial cardiac assessment includes baseline electrocardiograms and echocardiography until ages 6-7. Cardiovascular MRI may also be used to evaluate for early fibrotic changes. Multiple studies have shown the long-term benefit of adding angiotensin-converting enzyme inhibitors (ACE-I) and angiotensin-II receptor blocking (ARBs) agents. These agents modulate the production of angiotensin and inhibit the release of cardiac TGF-beta; thereby, reducing the amount of fibrosis in the myocardium. Current recommendations advise starting ACE-I and ARBS by 10 years of age to prevent long-term complications. Patients with DMD are also at risk for rhythm abnormalities such as atrial fibrillation/flutter, ventricular fibrillation, and ventricular tachycardia. Surveillance should include periodic 24-hour Holter monitoring especially when abnormal left ventricular function or myocardial fibrosis are detected.

Respiratory management

Development of upper respiratory infections could be deadly in patients with DMD due to difficulty with mucous clearance and respiratory muscle fatigue. As such, any illness should be taken very seriously with the most important focus of treatment being prevention. It is extremely important to monitor lung function throughout all stages of the disease. Forced vital capacity (FVC) measurements on spirometry measure the amount of air that can be forcibly exhaled after taking a deep breath. FVC typically rises as an individual grows and deteriorates over time with non-ambulation. In DMD patients, stiff, non-compliant chest walls develop due to muscle weakness, scoliosis, and poor positioning in wheelchairs. FVC can be used to establish a trajectory for disease progression and signal the need to initiate non-invasive ventilation. Forced vital capacity <55% is often reason to start BiPap. Any evidence of a weak cough and declining FVC should prompt a pulmonologist to start a cough assist device (also known as in/exsufflator). Cough assist creates an artificial cough. This was previously put in place as part of a child’s sick plan but is now recommended for use as a daily form of chest physical therapy. Glucocorticoids also help with respiratory function. Patients with DMD should also receive pneumococcal and yearly inactivated influenza vaccines.

Musculoskeletal management

The aim of musculoskeletal care in DMD patients is to maintain motor function and promote bone health. The assessment and treatment should involve a multi-disciplinary team of physical and occupational therapists, physiatrist, neurologist, orthopedic surgeon, and endocrinologist. Patients treated with glucocorticoids frequently develop osteoporosis, as it activates bone resorption and inhibits bone formation. Complications manifest as vertebral and long-bone fractures (distal femur, tibia, and fibula). Vertebral fractures are often asymptomatic; however, if left untreated, can lead to chronic back pain and spine deformity. A baseline spinal x-ray with intermittent follow-up imaging are recommended to assess spinal changes while on chronic glucocorticoids. Additionally, long-bone fractures occur more frequently in those on chronic glucocorticoids than those without steroid treatment. If left untreated, they may cause permanent damage and premature loss of ambulation. Preventable treatment for osteoporosis includes calcium and vitamin D supplementation.

Table 2. Symptomatic Management

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>Left ventricular dysfunction and cardiomyopathy: excessive fibrosis and hypertrophy of myocardium, treated with ACE-I and ARBS. Arhythmias: atrial fibrillation/flutter, ventricular tachycardia, and ventricular fibrillation, treat with antiarrhythmic medications.</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>Fractures: chronic glucocorticoid use leads to osteoporosis, vertebral and long bones (distal femur, tibia, fibula) fractures, prevent with calcium/vitamin D supplementation. Ankle Joint contractures: due to foot positioning and gait abnormalities, use ankle-foot orthoses or may require surgery. Scoliosis: regular assessment every 6 months during all stages, curve &gt; 20 degrees requires orthopedic surgery consult and possible bracing or posterior spinal fusion.</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Exacerbated by chronic glucocorticoid use. Impaired linear growth: assess every 6 months, &lt; 4cm/year requires referral. Delayed puberty: hypogonadism, no development by 14 years, testosterone replacement therapy. Adrenal insufficiency: suppression of hypothalamic-pituitary axis by chronic glucocorticoid use, caused by illness or abrupt discontinuation of steroid therapy, emergency IM hydrocortisone administration.</td>
</tr>
</tbody>
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continued on next page
DMD patients also present with ankle joint contractures due to foot positioning and gait abnormalities. Foot and ankle surgery may be required to improve foot positioning and ankle dorsiflexion; however, orthotics may be used to help prevent contracture recurrence. Lastly, assessment for scoliosis with spinal x-ray should be conducted every 6 months during all stages of DMD. At the first sign of scoliosis, Schroth physical therapy, which is focused on treating the spine, should be initiated. A curve of 20 degrees or more requires consult with an orthopedic surgeon and may require bracing and/or surgical intervention. The goal of spinal surgeries such as fusions and/or MAGEC rod placement is to prevent further progression of scoliosis, improve sitting tolerance, improve respiratory function, and reduce pain and discomfort.

Endocrine management

The goals of endocrine care in DMD management are to monitor growth and pubertal development and identify hormone deficiencies. Chronic glucocorticoid use exacerbates endocrine complications. Impaired linear growth is quite common and should be assessed every 6 months until full maturation and puberty completed. A height velocity less than 4 cm per year is consistent with impaired linear growth and necessitates endocrinology referral. Delayed puberty is due to hypogonadism and the steroids’ effect on pituitary hormones. It can be psychologically distressing and impact patients’ quality of life. If no pubertal development occurs by 14 years of age, then prompt referral is recommended. Testosterone replacement therapy is required to treat patients older than 14 years and/or patients older than 12 years on glucocorticoids with absent pubertal development. Adrenal insufficiency occurs due to suppression of the hypothalamic-pituitary axis if glucocorticoids are stopped abruptly due to illness or discontinued therapy. All patients and their families should be educated about the signs and symptoms of adrenal insufficiency and prescribed intramuscular hydrocortisone for emergencies.

Gastrointestinal management

Individuals with DMD often have gastrointestinal complications that include obesity, nutritional deficiencies, and progressive dysphagia. Symptomatic treatment and management aim to promote a healthy, balanced diet and optimize nutrition. Obesity is a major concern and often perpetuates into adulthood. Patients are also at risk for undernutrition with attention to micronutrients, calcium, and vitamin D. To address obesity and nutritional deficits, a dietitian should be involved to assess the patient’s nutritional needs and establish a nutritional plan. As DMD myopathy progresses, patients present with difficulty swallowing. Regular speech pathologist for a swallow study. If the dysphagia interferes with self-feeding and adequate nutrition, placement of a gastrostomy tube may be necessary. Lastly, DMD patients also complain of milder complications such as constipation, GERD, and gastroparesis. Constipation is a frequent complaint and is due to immobility, decreased colonic transit time, and dehydration. Daily treatment with probiotics and/or osmotic laxatives may be necessary.

Neuropsychiatric management

The role of dystrophin protein in DMD is not limited to muscle function. It's become increasingly recognized that specific dystrophin isoforms, such as Dp71 and Dp 140, are expressed in the brain, and their absence contributes to cognitive and developmental delays. These isoforms are primarily localized in the cerebellum, neocortex, hippocampus, and cortical and subcortical regions of the brain. Dysfunction of these regions promote impairments in a variety of areas resulting in increased prevalence of learning disabilities (dyslexia), attention-hyperactivity disorder, autism-spectrum disorder, and obsessive-compulsive disorder. Taking this into consideration, the authors of this article suggest that all children with autism have a CK level checked. Studies have shown that the severity of a patient’s cognitive and developmental delay may correlate with the location and effect of a specific dystrophin isoform. Neuropsychological evaluations should be considered at diagnosis to evaluate cognitive and psychological function and develop targeted intervention plans for home and school. Psychosocial support and close monitoring by practitioners should be conducted as these conditions may change over time.

Conclusion

Duchenne muscular dystrophy is a potentially lethal disorder affecting multiple body systems. Early detection of symptoms and a swift genetic diagnosis is essential to initiating treatment. Supportive management involving a multi-disciplinary team is essential to care, but it is so important to emphasize that treatment is now available, and many more drugs are being investigated. This is a great time of hope for the treatment of DMD.

References

Legal Update: *New Jersey's Paid Sick Leave Act Began October 29, 2018*

Guillermo J. Beades, Esq
Frier Levit Attorneys at Law

With the recent passing of NJ Rev. Stat. Sec. 34:11-56a et seq. a/k/a New Jersey’s Paid Sick Leave Act (“the Act”), employers across the state are working to determine the Act’s applicability and how to comply with it.

**What is covered?**

As of October 29, 2018, New Jersey’s Paid Sick Leave Act requires employers with employees in the state of New Jersey to provide paid sick leave. The “sick leave,” however, can be applied to more than just sick days. The Act outlines a number of instances that qualify for sick leave under the Act.

**Who are covered employers?**

The Act applies to all private employers with employees in the state of New Jersey, including temporary help service firms. Public employers already required to provide employees with sick leave pursuant to any other state law or regulation are not covered by the law. Similarly, construction workers covered by collective bargaining agreements, certain per diem healthcare employees, and public employees who already receive sick leave under other state laws are not covered.

Therefore, with few exceptions, the Act covers all employees engaged in service for compensation in the state of New Jersey.

**How is paid sick accrued?**

Leave time accrues at a rate of 1 hour for every 30 hours worked. Employers are not required to permit employees to accrue, use, or carry forward more than 40 hours of earned sick leave per benefit year.

Existing employees will begin to accrue leave on the effective date of the Act, while new hires will begin to accrue leave on the date of hire. New hires may be subject to a 120-calendar-day waiting period before use of accrued leave. After the 120-day waiting period, new hires may use leave as soon as it is accrued.

**Can an employer deny a request for sick leave or request advanced notice?**

If an employee’s need is foreseeable, an employer may require advance notice, not to exceed seven calendar days prior to the date the leave is to begin and the employee should make a reasonable effort to schedule the use of earned sick leave in a manner that does not unduly disrupt employer operations.

Employers may prohibit employees from using foreseeable earned sick leave on certain dates, and require reasonable documentation if sick leave that is not foreseeable is used during those dates.

The Act is clear that no employer shall take retaliatory personnel action or discriminate against an employee because the employee requests or uses earned sick leave either in accordance with this act or the employer’s own sick leave policy.

**Recordkeeping and Notices**

The Act requires employers to retain records documenting hours worked by employees and earned sick leave taken by employees for a period of five (5) years, and shall upon demand, allow the NJ Department of Labor access to those records to monitor compliance with the requirements of the act.

Beware that if an employer fails to keep records, the Department of Labor will presume that the employer has failed to provide the earned sick leave, absent clear and convincing evidence otherwise.

Lastly, all employers are required to post a Notice of Employee Rights in a visible area where all employees can easily read it. The Notice can be obtained on the New Jersey Department of Labor website.

**Conclusion**

While the passage of a new law many times leaves practice managers and physicians scrambling, the requirements of this Act are straightforward and not burdensome to comply with, but do require immediate attention.
Q&A on Paid Sick Leave

**Q** My office currently has a PTO bank, which combines personal, sick and vacation hours. Do I need to increase the allotment?

**A** You do not need to increase PTO, but you need to allow 5 days (40 hours) to Sick Leave time. So that leaves 35 PTO days and 5 Sick Leave days. The reason you need this differentiation is because under NJ law the definition of Sick Leave encompasses far more than an employee’s personal sickness and expands far beyond it.

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**Q** Can the hours only be used if the employee is sick?

**A** No. Hours can be used to take a parent/child to a doctor’s appointment or testing, meet with a child’s school or counselor regarding their health or school function.


“...The Act allows employees to take leave for absences resulting from the employee or a family member being a victim of domestic or sexual violence, such as absences for medical attention, services from a designated domestic violence agency or other victim services organization, psychological or other counseling, legal services or relocation.” ...“The Act also authorizes leave for public health emergencies and attendance at school-related conferences, meetings or events, or other meetings regarding care for the employee’s child, neither of which are covered by any other New Jersey leave law.”

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**Q** The law allows time off for a “family member”. Who does that encompass?


The NJPSLA defines a family member to include, among others, any individual “whose close association with the employee is the equivalent of a family relationship.” The Regulations provide little guidance as to what type of relationship meets the definition. The NJDOL explains a family member includes “any person with whom the employee has a significant personal bond that is, or is like, a family relationship, regardless of biological or legal relationship.” Accordingly, employers likely will need to interpret the definition rather broadly with respect to administration of any paid sick leave policy.

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**Q** Must employees accrue the sick hours before being able to use them, or can I “front” the hours?

**A** It is up to the employer if they choose to have their employee accrue the hours, or will make them available for use at the beginning of the benefit year. In the event hours are available in advance, you must reassess the allotment throughout the year. For example, if you “Advance” the employee 20 sick hours, once the employee works 630 hours in the benefit year, you must increase their allotment by 1 hour. (20 sick hours x 30 work hours= 600 work hours were “advanced”).

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**Q** Can an employer decide how sick days can be taken, like with PTO?

**A** Yes, an employer can decide if sick days must be taken in full (1 day / 8 hours) or if sick time can be taken in small increments (e.g., ½ day / 4 hours).

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**Q** Can an employer require an employee to use a doctor’s note to prove they were out sick?

**A** If your company policy requires employees to produce a doctor’s note for sick days, then yes, you can require a doctor’s note.
Legislative Update: Addressing Pediatric Behavioral Health

Joe Simonetta
Public Strategies Impact

Tracie DeSarno
Public Strategies Impact

As we write this report, we are nearing the end of the first year of this two-year legislative term. Governor Murphy signed his first budget bill which included $5 million in additional funding for the statewide expansion of the mental health collaborative which had been operating as a pilot program to address pediatric behavioral health issues. This successful program provides a collaboration of primary care physicians and mental health specialists aimed at improving the ability of primary care physicians to screen, care, manage and increase access to mental health services for children with behavioral health and substance abuse issues.

NJAAP continues to advocate for this program and is working with legislators to incorporate the collaboratives into other pieces of legislation. For example, Assemblyman Conaway and Senator Singleton have sponsored bills, A3926 and S2835 which require a board of education to ensure that students in grades seven through 12 annually receive a health screening for depression. As currently worded, the screening will be administered by a qualified professional, including a school psychologist, school nurse, guidance counselor, student assistance counselor, physician, school social worker or any other medical or mental health professional, and will consist of the Patient Health Questionnaire-2 or an equivalent depression screening tool, as determined by the Commissioners of Education and Health. A superintendent will be required to notify the parent or guardian of a student whose screening for depression detects a suspected deviation from the recommended standard and to encourage the parent or guardian to share the results of the screening with the student’s primary care physician. NJAAP is working with the sponsors to further amend these bills so that students who are identified will be referred to a collaborative.

NJAAP also worked closely with the sponsors of SCS724/754 which permits pharmacy interns and pharmacy externs to administer vaccines to patients, subject to the same requirements that currently apply to pharmacists who administer such vaccines. As originally introduced, this legislation would have expanded the number of vaccines pharmacists and pharmacy interns and externs could administer to children substantially beyond the influenza vaccine. After meeting with NJAAP, the sponsor agreed to eliminate those sections of the bill. Pharmacy interns and pharmacy externs will be permitted to administer an influenza vaccine to a patient who is seven years of age or older. For a patient who is under 18 years of age, the pharmacy intern or pharmacy extern may not administer the vaccine except with the permission of the patient’s parent or legal guardian. For a patient who is under 10 years of age, a pharmacy intern or pharmacy extern may not administer an influenza vaccine unless the vaccine has been prescribed for the patient by an authorized prescriber. This bill now awaits the Governor’s signature.

Two bills dealing with concussion were released from the Education Committee and NJAAP plans on working with the sponsors to tighten up the language. A1837 provides that a student enrolled in a school district who sustains a concussion must receive an evaluation by a licensed health care professional and written clearance from the licensed health care professional to return to school. The bill also provides that a student enrolled in a school district who sustains a concussion is prohibited from engaging in any physical activity at school including, but not limited to, recess or physical education. The student may not participate in any physical activity until evaluated by a licensed health care professional and receives written clearance to participate. Under current law, the Department of Education was required to develop and implement, by the 2011–2012 school year, a head injury safety training program on the recognition of the symptoms of head injuries and the appropriate amount of time to delay the return to competition of a student who suffers a head injury. The law provides that students who participate in interscholastic sports programs, intramural sports programs, or cheerleading programs who sustain or are suspected of having sustained a concussion or other head injury while engaged in a sports competition or practice must be immediately removed from the competition or practice. The student may not return to competition or practice until he is evaluated by a physician or other licensed healthcare provider trained in the evaluation and management of concussions and receives written clearance from such a physician. A2655 amends existing law to provide that, in addition to physicians, other licensed healthcare providers whose scope of practice includes the ability to diagnose and treat concussion may provide written clearance for the student’s return to play. Both bills define “licensed health care professional” to mean a health care provider whose scope of practice includes the ability to diagnose and treat a concussion which may be problematic.
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Primary care is an increasingly common venue in which children and adolescents present with behavioral health concerns. Unfortunately, pediatricians report that they do not feel prepared to address many of the behavioral health conditions that their patients present with such as ADHD, anxiety, depression, and suicidality. The American Academy of Pediatrics in a 2009 policy statement endorsed the need for innovations in behavioral health training within pediatric residency programs. This study describes and empirically evaluates comparative outcomes from three models of behavioral health training in pediatric residency programs: (1) training as usual (TAU; mandated 4-week developmental-behavioral pediatrics rotation), (2) enhanced didactic exposure (DE), and (3) enhanced didactic exposure plus integrated primary care (DE-IPC). P-values suggested that change in knowledge or skills after receiving training did not significantly depend on the model of training. However, effect sizes suggested that the changes over time in knowledge for the TAU group and skills for the DE-IPC group were large.

Keywords: interprofessional education; pediatrics, behavioral health, primary care, integrated care

1. Introduction

Pediatric residents and residency program directors report that training in the areas of mental and behavioral health within their programs is inadequate. Recognizing this state of training, the American Academy of Pediatrics (AAP) in a 2009 Policy Statement endorsed aspirational behavioral health competencies for all future pediatricians and cited the need for innovations in how pediatric residents are trained. Further, the policy statement identified key clinical areas—ADHD, anxiety, depression, and suicidality, as well as learner variables—knowledge and skills, in which these training innovations should focus. In a recent report, the pace of improvement in developing innovative training curricula in this area appears to be slow.

The importance of training pediatricians to effectively manage common behavioral health concerns is clear as these providers are typically more accessible than specialty behavioral health providers (BHPs) such as child and adolescent psychiatrists and psychologists. Additionally, specialty behavioral health services are typically covered through " carve-outs within managed care. These carve-outs often allocate a lower reimbursement rate for non-medical services and contract with a specific panel of local providers (who may or may not treat children or adolescents). When specialty behavioral health referral options are available, there remain access issues related to transportation and location barriers as well as stigma with seeking out these specialty services. Thus, there are low follow-through rates by patients to these externally-referred services.

Initiatives focused on integrating behavioral health services into the primary care medical home have proliferated recently. These initiatives address behavioral healthcare access issues while improving the quality of care through service coordination and minimizing fragmentation in care. Evaluation efforts have assessed the potential for these integrated approaches to improve care and show financial savings or costs offset. However, little has been done to show how to maximize the capacity of physicians to provide these behavioral health services.

The placement of BHPs (e.g., psychologists, social workers) in the medical home provides one approach to this problem and further increases the need for the medical providers to be competent in identifying behavioral health concerns and understanding which evidence-based treatments exist—whether they be medical or behavioral. The ability for pediatricians to incorporate routine screening around social, emotional, and behavioral development into their well-child visits and understand the need for on-going care that can be coordinated amongst a team of physical and behavioral health providers is essential for providing care within a biopsychosocial framework.

The purpose of this paper is to describe the development of innovations in behavioral health training within pediatric residency programs. This description includes three different training curricula: (1) training as usual (TAU), (2) enhanced didactic exposure (DE), and (3) enhanced didactic exposure plus integrated primary care (DE-IPC). Training as usual consists of the Accreditation Council for Graduate Medical Education (ACGME) mandated 4-week block rotation in developmental-behavioral pediatrics (DBP). Preliminary outcomes from the first year (out of three years) of implementation are discussed in the context of AAP’s learner variables—knowledge and skills in primary care behavioral health.

2. Method

This study was approved by the local institutional review boards at each training site.

2.1. Participants

Fifty-six residents across three pediatric residency programs participated in the study. Residency program sites were located in the northeastern United States. Residents, including chief residents, in combined programs with pediatrics (e.g., Internal Medicine/Pediatrics, Pediatrics/ Emergency Medicine, Pediatrics/Child and Adolescent Psychiatry) were excluded from the study. Twelve residents (out of 18) participated at site 1, 20 residents (out of 32) participated at site 2, and 24 residents (out of 32) participated at site 3. No residents declined study participation; non-participants at sites 1, 2, and 3 were missing by chance (e.g., prescheduled vacations, clinical schedules).

Table 1 on the following page reports descriptive statistics for demographic and training variables for each group at pre-training. Most residents were female (site 1=91.7%, site 2=90%, site 3=75%). The percentage of residents with an MD degree (compared to DO degree) was significantly higher in the DE and DE-IPC groups relative to the TAU group. The percentage of residents who completed one or more rotations in primary care with an embedded BHP was significantly higher in the TAU and DE groups relative to the DE-IPC group. Residents in the DE-IPC group were significantly less likely to have completed a clinical rotation or clerkship in medical school that had embedded BHPs on site compared to the TAU and DE-IPC groups. Differences between groups on other demographic and training variables were not significant including whether residents had completed their ACGME mandated DBP rotation prior to completion of the training year.

Residents at all sites rotate through a primary care continuity clinic during all three years of residency. Minimum behavioral health training at each site consists of an ACGME-mandated 1-month block rotation in developmental-behavioral pediatrics (DBP) in which residents shadow and observe hospital-based BHPs in psychiatry, psychology, and social work.

2.1. Training Curricula

See Table 2 on Page XX for overview of the training model delivered at each site.

2.1.1. Site 1: Training as Usual (TAU)

Residents completed their ACGME-mandated 4-week block rotation in developmental and behavioral pediatrics (DBP), with no additional didactics in behavioral health. The DBP rotation consists of varying degrees of shadowing/targeted observations and other immersion experiences in clinics providing care for typically-developing children and those who are at risk of developmental and behavioral problems by virtue of biomedical or psychosocial factors. At this site, residents took their DBP rotation in either their 1st or 3rd years. It is important to note that residents at sites 2 and 3 also are expected to complete a DBP rotation during their residency training. The other training modalities occur in addition to this rotation.

2.1.2. Site 2: Didactics exposure (DE)

This curriculum consists of 12-hours annually of behavioral health lectures delivered by pediatric psychologists during residents’ didactics time slot. The lectures emphasize evidence-based practice parameters and cover the following topics: ADHD, anxiety, depression, suicide, toileting, feeding, sleep, medically unexplained physical symptoms, behavior management,
Table 1  Demographic and Training Information by Study Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Training as Usual (TAU) (n = 12)</th>
<th>Didactic Exposure (DE) (n = 20)</th>
<th>Didactic + Integrated Primary Care (DE-IPC) (n = 24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, y (SD)</td>
<td>30.17 (2.29)</td>
<td>30.15 (2.41)</td>
<td>31.35 (2.29)</td>
</tr>
<tr>
<td>Males, n (%)</td>
<td>1 (8.33%)</td>
<td>2 (10%)</td>
<td>6 (25%)</td>
</tr>
<tr>
<td>Hard science major, n (%)</td>
<td>10 (83.33%)</td>
<td>12 (60%)</td>
<td>21 (87.5%)</td>
</tr>
<tr>
<td>MD degree (vs DO), n (%)</td>
<td>1 (8.33%)</td>
<td>12 (63.16%)</td>
<td>12 (50%)</td>
</tr>
<tr>
<td>Weeks in medical school on mental health rotation, w (SD)</td>
<td>4.83 (2.33)</td>
<td>5.75 (1.74)</td>
<td>5.08 (1.95)</td>
</tr>
<tr>
<td>Completed mental health training (outside of medical school/residency, n (%))</td>
<td>12 (100%)</td>
<td>19 (95%)</td>
<td>20 (83.33%)</td>
</tr>
<tr>
<td>Clinical rotations in primary care in medical school, n (%)</td>
<td>6 (100%)</td>
<td>20 (100%)</td>
<td>16 (100%)</td>
</tr>
<tr>
<td>Did those primary care practice(s) have an embedded behavioral health provider (BHP) on site?</td>
<td>5 (83.33%)</td>
<td>10 (50%)</td>
<td>2 (12.5%)</td>
</tr>
<tr>
<td>What type were they? Psychologists</td>
<td>2 (40%)</td>
<td>7 (70%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td>What type were they? Social Workers</td>
<td>4 (80%)</td>
<td>9 (90%)</td>
<td>1 (50%)</td>
</tr>
<tr>
<td>Current residency year, n (%)</td>
<td>5 (41.67%)</td>
<td>9 (45%)</td>
<td>13 (54.17%)</td>
</tr>
<tr>
<td>End of year - Completed DBP rotation, n (%)</td>
<td>2 (33.33%)</td>
<td>4 (36.36%)</td>
<td>4 (25%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

motivational interviewing, bullying, and collaborating with schools. Lecture topics were selected based on resident feedback obtained through focus groups as well as consultation with residency program faculty regarding their most pertinent training needs. Residents complete a 5-item quiz prior to and following the lectures as a self-assessment, which is not shared with training or research staff. Examples of the types of quiz questions included are those that are found on the Pediatrics Board Exam Content Outline (www.abp.org/sites/abp/files/pdf/blueprint_gp_2016.pdf) within Domain 28: Behavioral and Mental Health Issues. Lectures also include case vignettes to facilitate discussion. Prior to each lecture residents receive evidence-based practice parameters and other relevant resources regarding evaluation and treatment (e.g., Pedalink, Pediatrics in Review) which they are encouraged to read before each lecture session.

2.1.3. Site 3: Didactic Exposure plus Integrated Primary Care (DE-IPC)

This curriculum consisted of the same 12-hours annually of BH lectures that were delivered at site 2. To increase consistency and fidelity between the lectures across sites, the same BHP who delivered the lectures at site 2 also delivered the same lectures at site 3. In addition to didactic lectures, residents at this site also shared patient care with integrated BHPs (i.e., a licensed psychologist and a postdoctoral fellow in pediatric psychology) within the context of a “fully integrated” model. This included shared patient care through warm hand-offs (i.e., brief, unscheduled encounters during which the primary care physician [PCP] introduces the patient to the BHP for brief assessment and intervention for BH concerns), curbside consults (i.e., brief consultations regarding a specific patient issue or broad BH topic from the BHP to the PCP without bringing the BHP to the exam room to meet a patient) and joint appointments. BHPs also provided joint precepting to residents in conjunction with the attending PCP. The BHPs’ schedules were split to ensure that one of the two was always available for unscheduled warm handoffs and consults while the other provider was with their scheduled follow-up visits. Resident PCPs would either send a page to the BHP or precept directly with the BHP in conjunction with the attending PCP after identifying a BH concern with their patient. The BHP and resident PCP would briefly meet to discuss the patient’s history and reason for referral before the PCP would introduce the BHP to the patient in the exam room.

In addition to warm handoffs and curbside consults, the integrated service delivery component of this curriculum included live observation and performance feedback. This consisted of BHPs observing/providing feedback to residents in their management of ADHD, anxiety, depression, and/or suicidality. Feedback was structured via the completion of a checklist of components of an evaluation based on AAP/AACAP practice parameters and discussion of strengths/improvement areas. When identified in advance, the BHP would plan to be available to go into the exam room with the resident from the start of the appointment, after receiving verbal approval from patient. This was typically facilitated in advance during the morning pre-charting in the electronic medical record. BHPs would review with residents their scheduled patients for the day and identify those patients that were coming in for specific concerns related to ADHD, anxiety, depression, or suicidality. Suicidality referral concerns would often be last minute (sent from school), so these were identified and a plan was put into place to ask the family for their verbal consent that the BHP join in the appointment. Feedback consisted of both content components (i.e., adherence to evidence-based practice parameters for evaluation or treatment for a particular concern) and process components (i.e., use of interpersonal and communication skills; i.e., “common factors”). The feedback session included an opportunity for resident self-reflection and to identify areas for improvement. The BHP summarized major “take-aways” and/or future action steps with a rationale for why those steps are important for improving clinical care.

2.3 Survey Instrument

The instrument was a 29-item survey developed by study investigators (see Appendix 1). While pre-existing surveys have been developed to measure attitudes and knowledge, there has not been a published instrument which measures the construct of skills in pediatric residents’ service delivery to children and adolescents. Steele and colleagues assessed skills in the ability of practicing PCPs (pediatricians, family physicians) to accurately diagnose behavioral health conditions in response to case vignettes. However, a limitation of this study was its narrow focus on diagnostic accuracy compared to skills in carrying out evidence-based treatment.

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Table 2 Enhanced Training Curricula for Pediatric Residents

<table>
<thead>
<tr>
<th>Didactic Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
</tr>
<tr>
<td>• Consists of BHPs (psychologist and postdoctoral fellow) delivering lectures on common BH concerns in primary care</td>
</tr>
<tr>
<td>• 12 total lecture hours throughout year; approximately one per month</td>
</tr>
<tr>
<td>• Topics included: The Art of the Behavioral Health Referral, Behavioral Management I &amp; II, ADHD I &amp; II, Anxiety I &amp; II, Depression I &amp; II, Suicide/Crisis Response I &amp; II, Sleep, Feeding, Toiletting, Child Abuse, Medical Unexplained Physical Symptoms, Common Factors I &amp; II, Collaborating with Schools</td>
</tr>
<tr>
<td>Readings and Quizzes</td>
</tr>
<tr>
<td>• Consists of assigning readings for residents to read before each lecture</td>
</tr>
<tr>
<td>• Readings consisted of relevant practice parameters or standards of care for each topic; if formal practice parameters or standards of care did not exist, then relevant journal articles were selected for each topic; resources from the AAP's Mental Health Toolkit1</td>
</tr>
<tr>
<td>• Pre-lecture quizzes were administered to residents for some topics (e.g., ADHD, anxiety, depression, suicidality); feedback and discussion of answers were embedded into the lectures</td>
</tr>
<tr>
<td>Case Vignettes/Discussions</td>
</tr>
<tr>
<td>• Consists of residents reading case vignettes corresponding to each lecture topic, then describing BH concerns and identifying appropriate evaluation steps, diagnosis, and treatment plans based on information presented in the lecture</td>
</tr>
<tr>
<td>• Case discussions are built into lectures and discussed as a group</td>
</tr>
<tr>
<td>• Time is allotted to discuss actual cases that residents see in continuity clinic</td>
</tr>
<tr>
<td>Integrated Primary Care Exposure</td>
</tr>
<tr>
<td>Warm Hand-offs</td>
</tr>
<tr>
<td>• Consists of on-site BHPs (pediatric psychologist and postdoctoral fellow) collaborating with residents on BH concerns through direct patient care</td>
</tr>
<tr>
<td>• PCP directly introduces patient to BHP at the time of patient’s medical visit</td>
</tr>
<tr>
<td>• To facilitate enhanced learning, accommodations were made to residents schedules to allow them to remain in the room to observe BHP’s interactions with the patient</td>
</tr>
<tr>
<td>Curbside Consults</td>
</tr>
<tr>
<td>• Consists of on-site BHPs collaborating with residents through indirect (informal discussions in resident clinic workroom) patient care</td>
</tr>
<tr>
<td>• The resident formally obtains information or advice from the BHP to assist in the management of a patient with BH concerns</td>
</tr>
<tr>
<td>In-vivo Observation/Performance Feedback</td>
</tr>
<tr>
<td>• Consists of BHPs being in the room to observe residents in their conducting evaluations for ADHD, anxiety, depression, and/or suicidality, and to provide performance feedback to the resident after the clinical encounter</td>
</tr>
<tr>
<td>• Feedback sessions were standardized to include the joint completion of a checklist</td>
</tr>
<tr>
<td>• Checklist components consisted of degree to which the resident adhered to evidence-based practice parameters for a given condition as well as their use of “common factors” in the patient interaction (asking open-ended questions, reflective listening, allowing the patient ample time to talk)</td>
</tr>
<tr>
<td>• This discussion included time for residents to self-reflect and assess their performance as well as to identify action steps to improve future performance</td>
</tr>
<tr>
<td>Joint Precepting</td>
</tr>
<tr>
<td>• Psychologist precepts residents and psychology fellows in shared space</td>
</tr>
<tr>
<td>• Psychologist also precepts the resident in conjunction with medical preceptor</td>
</tr>
</tbody>
</table>


In the survey, Items 1-8 inquired about demographic and training variables—year in residency program, type of medical school attended, exposure to prior mental health training, future practice setting preferences. Items 9-21 consisted of resident’s self-reporting their level of knowledge of evidence-based practice parameters for specific behavioral health conditions on a 1-10 scale (1 = not at all knowledgeable; 10 = extremely knowledgeable); Items 22-29 consisted of open-ended questions asking residents to demonstrate their skills to carry out these practice parameters in evaluation and treatment for ADHD, anxiety, depression, and suicidality using clinical vignettes. Participants were asked to list all steps/considerations they would employ, in an exhaustive format, in evaluating and treating a presenting condition based explicitly on evidence-based practice parameters in their field.

Responses to the skills items were scored based on completeness and accuracy when compared with evidence-based practice parameters of the AAP14 and the American Academy of Child and Adolescent Psychiatry.15-17 Possible scores ranged: ADHD evaluation, 0-20; ADHD treatment, 0-10; anxiety evaluation, 0-12; anxiety treatment 0-7; depression evaluation, 0-16; depression treatment, 0-9; suicide evaluation, 0-3; suicide safety plan, 0-3. A higher point total equates to a higher degree of alignment with practice parameters (i.e., for each step/consideration a clinician would perform that is explicitly listed in the practice parameters for a given clinical condition, they would earn 1 point). After participants completed the skills items, scores were independently assigned by two pediatric psychologists using a scoring guide (see Appendix 2). Regarding inter-rater reliability, Kappa coefficients for items 22-29 ranged from 0.65 (Moderate agreement) to 0.89 (Almost perfect agreement). Items in which different scores were assigned by each rater, went to a third rater (also a pediatric psychologist) who scored the item independently as a tie-breaker.

2.4. Procedure

2.4.1. Data collection

Surveys were administered to pediatric residents at the outset (July) and end (June) of the training year. A trained research assistant administered surveys during a normally occurring didactic timeslot. Consent procedures were explained as participation in the study being voluntary and that their decision to complete the survey served as their consent. Residents were provided 45 minutes to complete the survey, although no residents at any site used the full time allotment.

2.4.2. Data analysis

The validity of the instrument used in this study was investigated by inspecting correlations between and within knowledge and skills variables at pre-training. Weighted least squares estimation was used to compute the correlations because this method is designed to handle ordinal variables. Two multilevel models (MLMs) were used to answer whether the DE and/or DE-IPC trainings improved residents’ knowledge and/or skills more than TAU. The dependent variables for the MLMs were unweighted sums of the knowledge and skills scores separately. Because the scales of the skills scores differed, the skills scores were converted to the same scale before they were summed. Composite scores were used because they are theoretically more reliable than item scores. The sums were unweighted because the instrument was new and the sample size was insufficient to perform factor analyses that would help determine weights. Composite variables were not computed for observations with missing data on one or more of the individual variables that formed the composite variable.

continued on next page
The formula for the MLMs was:

\[ Y_i = \beta_0 + \beta_1 \text{Time}_i + \beta_2 \text{DE}_i + \beta_3 \text{DE-IPC}_i + \beta_4 \text{Time}_i \times \text{DE-IPC}_i + u_i + \epsilon_i \]

\( Y_i \) represents the knowledge or skills composite scores at pre- or post-training. Time was a variable that was coded as 0 for pre-training scores and 1 for post-training scores. DE was a variable that was coded as 0 for residents in the DE-IPC and TAU groups and 1 for residents in the DE group. DE-IPC was a variable that was coded as 0 for residents in the DE and TAU groups and 1 for residents in the DE-IPC group. \( \beta_2 \) represents the difference in the scores from pre-training to post-training for the TAU group. \( \beta_3 \) represents the difference in the pre-training scores between the TAU and DE-IPC groups. \( \beta_2 \) and \( \beta_3 \) indicate whether the change in scores over time was significantly greater for the DE and DE-IPC groups, respectively, relative to the TAU group. Because the residents in the DE and DE-IPC groups were expected to improve overall knowledge and skills more than residents in the TAU group, it was hypothesized that \( \beta_2 \) and \( \beta_3 \) would be positive and significant. \( u_i \) accounts for the autocorrelation in the errors of the model. Satterthwaite’s approximation was used to calculate degrees of freedom for the t-tests examining the statistical significance of the parameter estimates.

Effect sizes for the change in the composite variables from pre-training to post-training were computed using Cohen’s d. When computing correlation coefficients between and within variables, pairwise deletion was used to handle missing data. When estimating the multilevel models, full information maximum likelihood estimation was used to include observations with missing data at pre-training or post-training. The percentage of observations with missing data at pre- and/or post-training was 50% for the knowledge composite and 46% for the skills composite. Demographic and training variables with a rate of missingness more than 5% were completion of DBP rotation (41%), completion of one or more primary care rotations (25%), and type of BHP in primary care rotation (60%).

3. Results

Table 3 shows means and standard deviations for the individual and composite knowledge and skills variables. Knowledge and skills scores for all three groups generally improved over the training year. The only composite score that did not increase over the year was the knowledge composite score for the DE group. Cohen’s d for the change in the knowledge composite scores over time was 1.12 for TAU, -0.24 for DE, and 0.44 for the DE-IPC group. Cohen’s d for the change in the skills composite scores over the training year was 0.11 for TAU, 0.46 for DE, and 1.01 for the DE-IPC group. Based on rules of thumb for describing the size of standardized mean differences, the increase in the knowledge composite score for the TAU group and the skills composite score for the DE-IPC group could be considered as large.

Table 4 on the following page shows the parameter estimates for the multilevel model testing whether the DE and/or DE-IPC training improved residents’ knowledge more than TAU. The parameters indicated that the pre-training knowledge scores of the DE-IPC group were significantly lower than the pre-training knowledge scores of the TAU group. The parameters also indicated that the knowledge scores of the TAU group did not significantly improve over time, and that change in the knowledge scores for the DE and DE-IPC groups was not significantly different from the change in the knowledge scores for the TAU group. Table 5 shows the parameter estimates for the multilevel model for the skills composite. The parameters indicated that the skills scores of the TAU group did not significantly improve over time, and that the change in the skills scores for the DE and DE-IPC groups was not significantly different from the change in skill scores for the TAU group. Although the skills scores for the DE and DE-IPC groups were not significantly different from the TAU group, they did however “trend” positively towards significance even at this preliminary

Table 3 Descriptive Statistics for Knowledge and Skills Variables by Group and Time

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Knowledge Composite</th>
<th>Knowledge Evaluation</th>
<th>Knowledge Treatment</th>
<th>Skills Composite</th>
<th>Skills Evaluation</th>
<th>Skills Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre M (SD)</td>
<td>TAU Pre M (SD)</td>
<td>TAU Post M (SD)</td>
<td>Pre M (SD)</td>
<td>TAU Post M (SD)</td>
<td>Pre M (SD)</td>
</tr>
<tr>
<td></td>
<td>0.64 (0.17)</td>
<td>0.83 (0.19)</td>
<td>0.54 (0.16)</td>
<td>0.50 (0.12)</td>
<td>0.53 (0.15)</td>
<td>0.58 (0.10)</td>
</tr>
<tr>
<td>ADHD</td>
<td>7.27 (1.85)</td>
<td>8.20 (1.48)</td>
<td>6.42 (2.19)</td>
<td>6.91 (2.21)</td>
<td>6.09 (1.81)</td>
<td>7.47 (1.13)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>7.27 (1.79)</td>
<td>8.40 (1.82)</td>
<td>6.16 (1.98)</td>
<td>6.18 (1.40)</td>
<td>6.26 (1.42)</td>
<td>7.00 (1.20)</td>
</tr>
<tr>
<td>Depression / Suicidality</td>
<td>7.73 (1.74)</td>
<td>9.40 (0.89)</td>
<td>7.16 (1.38)</td>
<td>6.45 (1.29)</td>
<td>7.17 (1.80)</td>
<td>7.33 (1.35)</td>
</tr>
<tr>
<td>Developmental Delays</td>
<td>7.36 (2.06)</td>
<td>8.00 (2.12)</td>
<td>6.89 (1.66)</td>
<td>6.18 (1.60)</td>
<td>6.52 (2.21)</td>
<td>6.93 (1.33)</td>
</tr>
<tr>
<td>Sleep</td>
<td>6.73 (1.68)</td>
<td>7.80 (2.28)</td>
<td>5.84 (1.64)</td>
<td>5.82 (1.47)</td>
<td>5.90 (1.83)</td>
<td>5.67 (1.29)</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>7.09 (1.64)</td>
<td>8.60 (1.14)</td>
<td>6.63 (1.42)</td>
<td>6.00 (1.67)</td>
<td>6.35 (2.12)</td>
<td>6.27 (1.39)</td>
</tr>
<tr>
<td></td>
<td>3.08 (0.90)</td>
<td>2.83 (0.75)</td>
<td>3.15 (1.18)</td>
<td>3.73 (1.35)</td>
<td>3.87 (1.63)</td>
<td>4.07 (1.49)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.55 (1.04)</td>
<td>2.67 (0.82)</td>
<td>2.55 (1.10)</td>
<td>2.82 (1.17)</td>
<td>2.83 (1.07)</td>
<td>3.80 (1.01)</td>
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<tr>
<td>Depression</td>
<td>2.92 (1.31)</td>
<td>2.17 (0.41)</td>
<td>2.85 (1.18)</td>
<td>3.64 (1.03)</td>
<td>3.65 (1.50)</td>
<td>3.53 (1.55)</td>
</tr>
<tr>
<td>Suicidality</td>
<td>1.17 (0.39)</td>
<td>1.40 (0.55)</td>
<td>1.60 (0.60)</td>
<td>1.64 (0.67)</td>
<td>1.52 (0.51)</td>
<td>1.47 (0.52)</td>
</tr>
<tr>
<td></td>
<td>2.67 (0.78)</td>
<td>2.67 (0.82)</td>
<td>2.65 (0.75)</td>
<td>2.55 (0.93)</td>
<td>2.26 (0.96)</td>
<td>3.20 (1.26)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.42 (0.51)</td>
<td>2.33 (0.52)</td>
<td>2.95 (0.76)</td>
<td>2.18 (0.80)</td>
<td>2.09 (0.85)</td>
<td>2.47 (0.64)</td>
</tr>
<tr>
<td>Depression</td>
<td>2.25 (0.45)</td>
<td>2.67 (0.82)</td>
<td>2.15 (0.59)</td>
<td>2.91 (0.83)</td>
<td>2.04 (0.56)</td>
<td>3.07 (1.10)</td>
</tr>
<tr>
<td>Suicidality</td>
<td>1.10 (0.32)</td>
<td>1.20 (0.45)</td>
<td>1.20 (0.62)</td>
<td>1.45 (0.52)</td>
<td>1.22 (0.42)</td>
<td>1.60 (0.63)</td>
</tr>
</tbody>
</table>

continued on page 36
Table 4  Parameters for Knowledge Multilevel Model

<table>
<thead>
<tr>
<th>Effect</th>
<th>Estimate</th>
<th>SE</th>
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Table 5  Parameters for Skills Multilevel Model

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The purpose of this paper was to describe and evaluate the delivery of three different behavioral health training approaches within pediatric residency programs: (1) training as usual (TAU), (2) enhanced didactic exposure (DE), and (3) enhanced didactic exposure plus integrated primary care (DE-IPC, "exposure and practice"). These preliminary outcomes report on the first year (out of three years) of training program implementation. Outcomes from pediatric residents’ participation in these training models revealed key differences in their effect on the construct of knowledge (i.e., a set of understandings related to a particular topic considered to be necessary for demonstration of a clinical skill) compared to the construct of skills (i.e., ability to use one's knowledge effectively in execution or performance). For example, without any additional training than what was mandated by ACGME, residents in the TAU group showed larger improvements on the knowledge composite than did the DE and DE-IPC groups. However, the skills composite score for the TAU group score remained the same at the end of the year, while the DE and DE-IPC groups both demonstrated score improvements. These findings pose important items for discussion.

First, the findings from the knowledge and skills assessment appear to fit a pattern that has been demonstrated in the medical education training literature pertaining to a general over-confidence by novice physicians in areas in which they receive less exposure. The phenomenon has been

Table 6  Correlation Matrix of Skills and Knowledge Variables

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Note. N = 49. 1 = Knowledge Evaluation ADHD; 2 = Knowledge Evaluation Anxiety; 3 = Knowledge Evaluation Depression / Suicidality; 4 = Knowledge Evaluation Dev. Delay; 5 = Knowledge Evaluation Sleep; 6 = Knowledge Evaluation Substance Abuse; 7 = Knowledge Treatment ADHD; 8 = Knowledge Treatment Anxiety; 9 = Knowledge Treatment Depression / Suicidality; 10 = Knowledge Treatment Dev. Delay; 11 = Knowledge Treatment Sleep; 12 = Knowledge Treatment Substance Abuse; 13 = Skills Evaluation ADHD; 14 = Skills Evaluation Anxiety; 15 = Skills Evaluation Depression / Suicidality; 16 = Skills Suicidality Evaluation; 17 = Skills Treatment ADHD; 18 = Skills Treatment Depression; 19 = Skills Treatment Depression. Continued on next page.
referred to as the Dunning-Kruger effect\(^2\) and represents a finding in which people show difficulty in recognizing their own incompetence in key areas; the idea being that the lack of exposure to a given area prohibits self-awareness of where their competencies fall short (i.e., illusory superiority bias). In pediatric residency training, behavioral health has repeatedly been deemed as an area in which residents lack training and exposure\(^3\) and may partially explain the general overconfidence that was found in TAU residents in terms of their perceived knowledge that was found to not be congruent with their demonstrated knowledge (i.e., skills). Conversely, the DE group actually had a decrease in the knowledge composite score (0.54 to 0.50) from pre to post, suggesting a potential dynamic whereby more exposure to a topic allows residents to realize how much more there was for them to know (i.e., “the more you learn, the less you realize you know” phenomenon).

Second, the knowledge scores were a self-report of residents’ perceived knowledge of evidence-based practice parameters for clinical care. On the other hand, the skills scores were objectively measured constructs of residents actually demonstrating their knowledge of the use of evidence-based practice parameters. This self-reported knowledge versus demonstrated knowledge (or “know how” versus “show how”) distinction is important for training program faculty to recognize as it suggests the need to be aware of how assessments are structured and to ensure that evaluation of residents includes measurements for the construct of skills in addition to knowledge. Training programs may likely find that developing methods to evaluate skills (or demonstrated knowledge) may be more difficult as they often require some type of competency assessment in response to an observed clinical encounter or case vignette. However, data gathered from these types of authentic assessments will likely be more useful in the process of formative assessment in identifying and addressing key behavioral health competencies which are in need of further development and support. The clinical case vignette tool used in the study was a time and resource efficient approach that allowed for more meaningful assessment of competencies in behavioral health. This case vignette approach may offer a feasible option for training programs that do not have the time or resources to have faculty conduct multiple observations of clinical encounters with patients.

Finally, this study’s findings pose implications for workforce development as there is a widely acknowledged shortage of faculty within pediatric residency programs who can provide sufficient behavioral health training to residents. Hampton and colleagues\(^4\) found that residents reported a substantial difficulty in finding faculty mentors who were able to competently model how to deliver effective behavioral healthcare. Developmental-behavioral pediatricians are commonly the faculty who are positioned to train residents in developmental, social, and behavioral aspects of care with patients. However, there is a shortage of well-trained developmental-behavioral pediatricians; thus, pediatric residency programs report difficulty in hiring these providers because they are in such demand.\(^2\) As a result, pediatric residency programs are increasingly relying on psychologists and social workers to provide this interprofessional training and education to their residents. In fact, over 90% of pediatric residency programs in the U.S. now have behavioral health providers on their training faculty; 81.3% of programs have psychologists on faculty and 58.2% of programs have social workers on faculty.\(^2\)

4.1 Limitations

This study’s findings should be interpreted in the context of several limitations. First, a convenience sample was used from the same area of the northeastern U.S. which reduces generalizability to pediatric residents nationwide. Future research should adapt and implement these models to determine their effects within their local circumstances. Second, the survey used in this study was developed by study investigators due to the lack of preexisting validated tools. Thus, future research should explore the psychometric properties of this tool. Third, as noted earlier, the knowledge component of the survey relied on self-report which poses numerous biases and limitations when interpreting how that self-reported knowledge translates to skills. However, a contribution of the present study pertains to the recognition of the incongruence between yielded knowledge and skills scores as that presents implications for future training and evaluation efforts. Finally, although the skills construct was objectively measured by multiple raters, the task required substantial exertion of participant effort in writing out all possible steps they would carry out in providing clinical care. Thus, given the exertion required on this voluntary task, it is unclear if the obtained results are representative of their true competencies or if they are an underrepresentation due to potential fatigue.

5. Conclusion

Although the small sample size from the first out of three years of training program implementation made it difficult to detect statistically significant differences in improvements of knowledge and skills, the skills scores for the DE (“exposure”) and DE-IPC (“exposure and practice”) groups did “trend” positively towards significance. Increased sample sizes that will come from years two and three of this study will likely make it easier to detect statistical significance. Nevertheless, this preliminary study suggests that interprofessional training experiences have the potential to remediate the currently inadequate standard of training in behavioral health for pediatric residents. These competencies are increasingly important given the prevalence of behavioral health concerns that present in primary care and the access barriers that these children and families face in seeking out services from specialty BHPs. Thus, PCPs such as pediatricians and pediatric residents are uniquely positioned to deliver this care contingent on their possessing the appropriate training and competencies. Enhanced didactic exposure as a training delivery model appears to be a time-efficient method of learning enhancement of evidence-based behavioral health practices for pediatric residents. For programs that have the internal capacity to facilitate integrated care within the continuity training clinic, pediatric residents appear to yield an additional benefit from interprofessional collaboration with BHPs around shared patient care.

References


continued on page 38
• Family history (medical, psychological, etc.)?
• Social history?
• Educational history?
• Patients developmental history?

ADHD Evaluation

Instructions: Award one point for each of the below bullets

- Physical exam?
- Screen for sensory impairments (vision/hearing)?
- Rating scales?
- Standardized/validated rating scales (Vanderbilt/Conners, etc.)?
- Diagnostic criteria met based on DSM-5/ICD-10 criteria?
  - Has 6/9 symptoms in each category?
  - Meets age of onset criteria?
  - Causes impairment in multiple settings?

ADHD Treatment

- Did they make an age distinction (preschool vs school age)?
- Behavioral therapy?
- Stimulant medication?
- First line either behavioral therapy or combined treatment; 2nd line stimulants?

Appendix 1

Pediatric Residents’ Knowledge and Skills in Behavioral Health Survey

24/25. Pediatric patient screened positive for signs or symptoms suggesting Anxiety

a. Please list steps for evaluation and treatment (as many as you can list)

b. Your response should address what the evaluation should look like and diagnostic features you would look for.

c. If a clinical diagnosis is made, how would you approach treatment (please take into account differences, if any, between a preschool- and school-age patient)?

26/27. Pediatric patient screened positive for signs or symptoms suggesting Depression

a. Please list steps for evaluation and treatment (as many as you can list)

b. Your response should address what the evaluation should look like and diagnostic features you would look for (8 common characteristics/symptoms)

c. If a clinical diagnosis is made, how would you approach treatment (please take into account differences, if any, between mild and moderate/severe depression)? Please note: There is a separate question addressing suicidality.

28/29. Pediatric patient identified with signs or symptoms suggesting Suicidal behavior

a. Please list key risk factors (28) and list the steps in developing a suicide safety plan (29). We are looking for the quantity of accurate responses you can provide.

Appendix 2

Skills Scoring Guide

- First line either behavioral therapy or combined treatment; 2nd line stimulants?
Appendix 2
Skills Scoring Guide (continued)

Depression Evaluation
- Evaluate symptoms (if they simply write “SIGECAPS”, they get 1 point; if they list them out, they can get extra points depending on how many they list)?
- SIGECAPS (1-3 = 1; 4-6 = 2; all = 3)
- Screen, assess for, rule out other coexisting conditions?
- Presence of ongoing or past exposure to negative event?
- Environment in which low moods occur?
- Social/family support?
- Developmental/psychiatric history?
- Social history?
- Educational history?
- Medical history
- Family/family psychiatric history?
- Diagnostic criteria met based on DSM-5/ICD-10 criteria?
  - Must have impairment present?
  - Impairment in at least 5 domains of SIGECAPS?
  - Occurs in same 2-week period?

Depression Treatment
- Treatment includes acute and continuation/maintenance phase?
- Active support and monitoring?
- Behavioral therapy?
- Do they list a specific type (IPT, CBT, DBT, psychoanalytic, ACT, etc.)?
- Psychotropic medication?
- Mild severity- active support monitoring and/or behavioral therapy; moderate to severe severity – medication?
- Psychiatric consult for medication or refer to child/adolescent psychiatric if deemed appropriate?
- Follow-up monitoring/evaluation should occur?
- To consolidate the response to the acute treatment and avoid relapse, treatment should be continued for 6-12 months?

Suicide Risk Factors
- 1-5 = 1
- 6-10 = 2
- 11+ = 3

Suicide Safety Planning
- 1-3 = 1
- 4-6 = 2
- 7+ = 3

Anxiety Evaluation
- Evaluate symptoms?
- Screen, assess for, rule out other coexisting conditions?
- Rule out physical health conditions that may mimic anxiety symptoms (hyperthyroidism, caffeineism, migraine, asthma, seizure disorders, and lead intoxication)?
- Avoidance level?
- Distress level (SUDS, etc.)?
- Patients’ developmental/psychological history?
- Patients medical history?
- Family medical/psychological history?
- Is anxiety/fears/worries developmentally appropriate?
- Diagnostic criteria met based on DSM-5/ICD-10 criteria?
  - Must have impairment present?
  - Determine which anxiety disorder is present?

Anxiety Treatment
- Provide education to the child/family of child about the anxiety disorder?
- Behavioral therapy?
- Behavioral therapy as first line?
- CBT, exposure based, or desensitization?
- Psychotropic medications?
- Psychotropic medication if moderate to severe severity?
- Consider school-based interventions (accommodations, teacher consultation, etc.)?
- Follow-up evaluation and monitoring?

Suicide Risk Factors
- 1-5 = 1
- 6-10 = 2
- 11+ = 3

Suicide Safety Planning
- 1-3 = 1
- 4-6 = 2
- 7+ = 3
Cultural Influence in Pediatric Care and Management

Cooper University Hospital is in the heart of Camden and the Physician's care for a diverse population in and around Camden city. The population mainly come from Hispanic and African American heritage. The physicians that work in Cooper belong to various ethnic and cultural backgrounds as well. Providing culturally effective health care has become imperative and an essential tool to accommodate and adapt to this culturally diverse population. Pediatric management involves parents of these children, who actively participate in their care plans and be involved in their treatment goals. Degree of understanding of treatment options recommended by health care providers who do not share their cultural beliefs may affect the compliance rate of treatments, especially in younger kids. The physician must always show respect for the family's belief and willingness to discuss reasonable alternatives with the family.

Cultural knowledge amongst providers when seeing different racial-ethnic background patient's includes understanding patient's culture i.e. follow individualistic vs collective decision making, whether they belong to conservative vs expressive community, whether the family style matters the decision making i.e. Hierarchical, Patriarchal, Matriarchal, whether they belong to minority ethnic groups, whether they understand the level of acculturation with dominant group. It is also important to know if the patient and their family are born and raised in the US vs immigrated from the country of origin, whether they have any language barriers, whether they understand the US medical system. It supports subtle skills to value the definition of various physical and mental health illnesses and patient's cultural value behind decision making for management of various diseases. Some factors that are useful in cultural competency are being aware about the breach between the ethics and values of providers and patients. (Education)

Recent census has revealed that children under 18 with Hispanic background are increasing in the US. Although they may adapt easily than their adult parents, knowledge of acculturation process and dilemmas are essential in children who have faced difficulties due to many reasons or pressures. Familiarity amongst physician with concepts of familismo (close family ties), personalismo (people-centered living), and simpatia (easy going, pleasant personal qualities) provides a cultural comfort for these Hispanic children, who value closer personal space and physical contact as well as involvement of group membership in decision making for healthcare management. (BYU)

Children belonging to the African American background grow up with a culture respecting involvement of extended and immediate family members, a sense of group involvement, shared community and sense of personal touch. Involving these characteristics in addition to factors like respect to elders and involvement of family members in care of children can add compliance for seeking medical care.

Studies have identified challenges amongst Asian American children and their family due to difficulties in balancing their traditional cultural ideas of hierarchical, patriarchal structured philosophy and the dominant group's individualistic philosophy. They are also raised to avoid bringing shame to the family, increase peace, harmony amongst family. Often, they are expected to be strong individually in times of distress and the family ties are helpful to provide guidance during times of crisis. They do not believe in individualistic and disruptive behavior of the stressed individual. Hence using indirect methods of communication for example using the body language, gestures may be appropriately used in addition to verbal communication for some Asian pediatric patients with strong ties to their ancestral culture.

Through this paper we are attempting to understand some factors that culturally and ethnically influence in management of pediatric diseases like Obesity, Diabetes Mellitus, Asthma, ADHD to enhance cultural awareness, competence, and sensitivity for therapeutic interventions in the pediatric population.

OBESITY

Every culture has a guideline for food acceptability. Although individuals may have their personal preference, their range of acceptance stays within the cultural limitations. Also, the type of food selection differs according to the socioeconomic class of the people. Food is generally known to bind family and community together and form integral parts of cultural pattern.
Obesity is defined as the BMI of over 95 percentiles for children and teens of same age and gender. Most of the causes for obesity has been consuming high caloric food, inadequate physical activities, increasing sedentary activities like watching television, electronic gadgets, medications and inappropriate sleep routines.

New Jersey has the 14th lowest adult obesity rate in nation, and there has been declining obesity amongst pediatric population from 18.8% to 15.3 % according to the The State of Obesity: Better Policies for a healthier America in August 2017. 

Data from NHANES 2007-2008 showed that among adolescent boys aged 12–19 years, Mexican American boys had the highest prevalence rate of obesity (26.8%), whereas African American and Non-Hispanic White boys had lower prevalence rates of 19.8% and 16.7%, respectively. African American girls had the highest prevalence rate of obesity between ages 12-19 years (29.2%), whereas Mexican American and Non-Hispanic White girls had prevalence rates of 17.4% and 14.5%, respectively (Fryar, 2014).

Hispanic background: Children from Hispanic descent are at higher risk for obesity. Other than the genetic predisposing factors for obesity, one of the cultural factors for obesity is likely the traditional concept of “bigger is healthier”. Cultural beliefs like feeding based on grandparent’s recommendation, traditional food over processed food, pressuring the kids with threats or bribes for eating, considering “skinny” child to be a sign of bad parenting skills could lead to increase in prevalence of overweight in these kids. (Lindberg, 2013) However, it is noticed that Hispanic population recently immigrated to USA are healthier and less obese than Hispanic population living in the USA for a longer period. Study has found 4 times higher obesity rates in Hispanic people living in USA for over 15 years than those living less than 5 years. This is likely due to social factors like socioeconomic status, mother’s immediate social support networks, unavailability of health dietary options and adoption of faulty dietary habits like high fat, low fiber diet in immigrant group of people and psychological factors like body image issues, bullying, depression. Studies have found that maternal weight status, maternal feeding attitude towards their child influences the risk for overweight in children. (Crawford et al., 2004). Thus, nutritional education efforts with Hispanics should be focused on identifying positive eating behaviors according to their biopsychosocial factors rather than guiding them based on the child’s weight status (Galarrraga, 2007).

Due to the personal perceptions of the mother’s regarding weight, obesity, understanding of “overweight” to be due to lifestyle vs illness and less likely looking at their “chubby” children as overweight or obese possibly could lead to resistance to seek help for diagnosis or management. (AC, 2011)

African background: Most of the kids born to parents of African background are born in the USA. However prevalence of obesity in African American children as compared to the Non-African American Caucasian group is higher by 5.9% (Obesity) Genetically kids with African background are also at higher risk than the Non-African Caucasian population, but there could be possibility of increasing mutations and variance in genes, noted in this group due to some cultural practice of consanguineous or assertive marriage. However, in African American population the risk factors for obesity seems to be cultural and socioeconomic factors more than the genetic factor. Per the culture, having the child with threats or bribes for eating, considering “skinny” child to be a sign of bad parenting skills could lead to increase in prevalence of overweight in children. (Crawford et al., 2004). Thus, nutritional education efforts with Hispanics should be focused on identifying positive eating behaviors according to their biopsychosocial factors rather than guiding them based on the child’s weight status (Galarrraga, 2007).

Overall, the prevalence of diabetes among NJ FamilyCare youth members below 20 years of age is low. (NJ.State, 2016)According to a study done to identify race and ethnic difference in Diabetes and Diabetes Complications, (Spanakis, 2013), the statistics of Type 1 and 2 Diabetes amongst the pediatric (0-9 years of age) and adolescent (10-19 years of age) population, revealed that the prevalence of Type 1 Diabetes in White population (Non-Hispanic) are around 1.03 and 2.89 per 1000 respectively, while amongst the Hispanic population was 0.44 and 1.59 per 1000 and African American population is 0.57 and 2.04 per 1000 respectively. The prevalence was very minimal amongst the Asian population for Type 1. For Type 2 Diabetes, the prevalence in the pediatric age group was lowest in all ethnic groups, except in Native Americans and African Americans the adolescent prevalence was 1.45 and 1.06 respectively. African Americans, Native Americans and Alaskan Natives and Hispanic Americans are 2.3, 1.9 and 1.5 times more likely to die from diabetes when compared to the White American (Non-Hispanic) population. (Spanakis, 2013)

Hispanic background: The prevalence of prediabetes is higher in Hispanic children. The most likely reason for this is linked to the higher obesity rates in these children, forty-four percent of Type 1 DM children are obese or overweight. Studies have found that elevated lipids, poor glycemic control may put these children with Type 1 and 2 DM at higher risk for complications. (Lawrence JM). Most of the cultural factors around this rise in DM is related to obesity and the socioeconomic status of the minority ethnic group of people. Some other factors likely causing poor DM management are educational qualifications of the caretakers of the Hispanic group, irregular use of insulin pump/medications, however the involvement in the care of their children has been very high. Providers need to be more aware regarding these social barriers along with cultural barriers in management of DM in these children.

African background: African American are increased risk for type 2 DM, extending to children and adolescents, due to increasing obesity in this population. Studies have revealed children with greater supervision by parents/family had better control in their glycemic control, even in children from African culture, despite the cultural pressures or demands of increased autonomy or individual responsibility in adolescent age group. (B, 2002)

The metabolic control and HbA1c control is more difficult in younger patients due to multifaceted factors. (Imad M. El-Kebbi & al, 2003) Acculturation of the migrant population, poor SES, poor family support, poor resources of basic requirements of food, lesser access to health care facilities, lack of insurance increase the risk of noncompliance, poorer adherence to medications and thus lead to poorer outcomes of health.

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The HbA1c in African Americans and Hispanic groups are found to have 0.6 and 0.5 % higher score than the Non-Hispanic White population. (Kirk JK, 2006). There are additional factors that are responsible for the poor glycemic control in the above ethnic groups, which include variations in erythrocyte membrane permeability to glucose, glucose transport across the erythrocyte membrane, differences in glycolytic rates, non-enzymatic glycation reactions and deglycation (Daggo-Jack, 2010) Some psychosocial-cultural factors in addition to biological factors include psychological factors like depression, which is more prevalent in the minority groups. Acculturation of the migrant population, poor SES, poor family support, poor resources of basic requirements of food, lesser access to pediatricians, lack of insurance increase the risk of noncompliance, poorer adherence to medications and thus lead to poorer outcomes of health. Culturally competent awareness of the various factors – based on the cultural formulation (as in table 1) for Diabetes, would provide not only efficient provider–patient communication, but additional adherence to the management of Diabetes and better patient outcomes thus reducing the microvascular and macrovascular comorbidities in these children.

Involvement of families and children with cultural competence potentially could increase the confidence of these children to accept their disease, be mindful of checking their BG, even at school and take insulin without feeling shy. This has a strong potential to change the attitude and behavior of these children in managing their own illness and lead a healthier life.

**ASTHMA**

Childhood asthma affects over 8 million children in the U.S. and is the most prevalent childhood chronic illness. Per Department of State of NJ Asthma currently is affecting 9% of pediatric and adult population. In NJ, prevalence of Asthma and hospitalization rates were higher in the rural areas like Atlantic (11.3%, 19.6), Cumberland (13.9%, 22.2), Salem county had the highest asthma prevalence and Atlantic and Cumberland had the highest rates of asthma hospitalization. It is found that the Atlantic and Cumberland counties have higher Spanish speaking population. The general prevalence of Asthma in PR kids is 19% and in Mexican kids are 6.4%. African American, groups have a prevalence of about 14%. The lifetime prevalence of asthma was twice as high for African American compared with Non-Hispanic White children. It is also observed that asthma related hospitalization was higher in Hispanic and African American population, 3-5 times higher than in Non-Hispanic Whites.

Socioeconomic factors related to poverty in urban cities like violence, racial discrimination can increase asthma risk- seen commonly in minority ethnic groups like population from Hispanic and African backgrounds. Similarly, cultural belief’s regarding medications, acculturative stress, use of home remedies possibly could interfere in Asthma treatment strategies. (McQuaid E L, 2009)

Hispanic background: It is observed that the genetic vulnerability to indoor and outdoor allergens, exposure to maternal in utero smoking is higher in Hispanic population and amongst them more in population from PR. Children from PR experience higher prevalence rate for asthma compared to other Hispanic cultural groups of children and to the African and Non Latin white group of children, equalizing the socioeconomic strata. (Lara M, 2006). It is unclear if ethnic identity amongst Latinos affects the asthma morbidity, knowing that sub cultural groups with this background usually follow “collectivism” involving family in the care for asthma, maintaining strength of their heritage. Although some families attempt to acculturate to mainstream culture in United states, more studies are required to investigate context of the acculturation process and negotiate the health care system in USA (Daphne Koinis-Mitchell, 2012) In a recent study examining the familial and cultural process in Latino families, reported higher levels of connectedness exerted a protective function in the association with lower levels of asthma related functional limitation. Thus connectedness/familismo can be protective to deal with everyday stress in management of asthma. In the same study they found stronger association between ethnic identity with lower risk of experiencing an asthma ED visit in last 12 months (Koinis-Mitchell D, 2008)

African background: Children from African background are two times likely to be hospitalized for asthma and four times likely to die from Asthma than the Caucasian culture group. African American population are higher prone for genetic disorders and asthma. However the diagnosis and management for asthma could be challenging in the kids due to lack of cultural concern for the “African English” language, that the family could be speaking, increase beliefs amongst the families for spiritual practices like voodoo for cause of their illness, personal grudges against providers due to past racial discriminations, leading to more hospitalization and increase in morbidities amongst the population. They are also predisposed to differences in access to care, differential access to housing, differential patterns of medical care use. In addition, high risk neighborhood leading to need to keep children indoors because of community violence in unsafe neighborhoods causes decrease in physical activities, increasing exposure to indoor allergens (in addition to tobacco smoke or roaches allergens), lack of access to playgrounds or healthy diet leading to obesity and thus increasing prevalence of asthma in such populations. Marginalization of minorities due to racial and economic factors leads them to increased risk to these psychosocial stressors and thus greater comorbidities of Asthma complications. Exposure to violence may lead to reduced perceived control, which may, in turn, be associated with poorer asthma management and outcomes. (Forno, 2009). Low SES adolescents from minority groups also had greater stress experiences and lower beliefs about control over their health, which partially explained the relationship between SES and IL-5/IFN-?, poor treatment adherence and increase in hospitalization. (Wright, 2005) They are less adherent to taking medication for asthma, have more concerns about corticosteroid use and its side effects.

The cultural competence for African heritage requires to understand not only the strong tradition to respect the closed personal space for the population, but also the past effects of race, socioeconomic status, violence in their culture and society. A study looking at individual based factors in the African culture children, revealed a positive attitude towards school were associated with lower risk of experiencing ED visit for asthma. They appeared to have higher knowledge about the illness or were motivated to better care for their illness- asthma. Culturally sensitive community-based asthma education programs in addition to culturally competent physicians may improve patient-clinician rapport and thus patient outcomes. Further research on asthma pharmacology for ethnically and culturally centered population can help to define optimal asthma medication regimen for these groups.

**ADHD**

The prevalence for ADHD per CDC is 11 %, in age group 4-17 years, which is a rise by 42% in less than 8 years. Overall prevalence is higher in Mid-Western States, with prevalence of 5.5% in NJ. The general prevalence rates per ethnic groups are Non-Hispanic Whites (9.8%), African American (9.5%) and Hispanics (5.5%). It is observed that children with ADHD behavioral symptoms are diagnosed more frequently in North America than would kids be diagnosed in rest of the world, for example England. This partly is due to the difference of definition of ADHD in American diagnostic criteria vs England. Jacobson (2006). Acceptance of ADHD as a diagnosis may vary based on cultural factors between White Caucasian and other minority groups, likely as culture of accepting parental involvement as optimal vs excessive differs in American dominant culture. Interpretation of unacceptable behavior differs amongst parents, teachers, healthcare providers based on their sociocultural and moral behavioral belief’s. Bussing, Koru-Ljungberg, Gary, Mason, & Garvan (2005), Factors decreasing children’s risk of an ADHD diagnosis included engaging in learning-related behaviors (eg, being attentive), displaying greater academic achievement, and not having health insurance (Olaniyi, 2007). Possible discrepancy in diagnosing ADHD in minority groups could be multifactorial. It may be difficult to isolate non-biological factors related to ethnicity and race (like providers prejudice against patient’s race or patients personal cultural reticence for seeking help for mental health) from factors related to socioeconomic variability faced by ethnic minority groups like Hispanic or African background. These could include lack of insurance, lack of access to medical care or ability to pay for medications. The specific type of problems adversely affecting clinical outcomes in minorities are poverty, lack of insurance, language barriers in acculturated and non-acculturated immigrants, inadequate knowledge about ADHD, cultural attitude about childhood behaviors, any mental health disorder or medications for these disorders. There also seems to be a stigmatization against mental disorders and racial -ethnic background. The providers are also known to be disapproving of cultural parameters or tend to harbor an unconscious bias against minority groups,

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Being culturally respectful regarding patient’s behavior, involving parents/families if the behavior is discordant with their cultural norm can facilitate cultural competent management for ADHD. (al. 2014)

Hispanic background: The Hispanic generations living in Camden have been acculturated to the North American culture. However, the basic familial tradition of familialism, which are ethnically, genetically fine-tuned into the Hispanic culture. Some of the behaviors like multitsasking, not looking into the eye directly while talking to hierarchical person, unable to speak up when asked to speak to someone from hierarchy could be considered as inattentive part of ADHD disorder. Culturally acceptable behavior for Hispanic family, may not be acceptable for teachers or healthcare providers who are not Latinos. This may lead to variable degree of referrals for diagnosis and evaluation for the disorder. During an evaluation, language barrier and communication with the patient could potentially interfere in the accuracy and efficiency. It is observed that based on the school and healthcare providers feedback, the compliance rates for medication could be affected due to lack of knowledge amongst the Latino Parents, the need for cultural familiarization as well as shortage of bilingual mental health providers. Parents seek less help with providers and are likely to drop out of the treatment more often than others.

African background: A systemic review found that children from African background in USA, displayed more ADHD symptoms, however were diagnosed less often, possible due to parental belief’s about ADHD and poor access to treatment. (al M. T., 2009)

Amongst the population from African culture, mental illness is considered as shame or a sign of personal weakness. Such an attitude of accepting a mental illness, and more so seeking professional help is lacking more in lower socioeconomic or in poor educationally qualified families. Thus the acceptance of African culture parents for a diagnosis of ADHD (more so in girls) seeking help, services, school based interventions or any treatment is less prevalent. Children brought up with these belief’s when grow up, are more likely to not seek any help for themselves or their progeny. The perception of racism or stigmatization can discourage parents of children with ADHD from seeking treatment, as indicated by a Harris Interactive Poll in which 36% of African American parents (versus 19% of Hispanic parents) reported that race could compromise the care provided for their children with ADHD, and more than half of parents in both groups attributed lack of treatment to fear that their children would be labeled by the ADHD diagnosis. (Taylor H) There is also concern for jeopardizing the chance of seeking employment or serving the military. (Development, 2000) There also seems to be increased stigmatization about disclosing one’s diagnosis, taking medications publicly or fear for parents that their parenting may be questioned. These factors possibly could be keeping the population from seeking any help from the medical providers. Also there is a possibility of personal bias from the providers if they are from the same culture as the patient or different culture in accepting the diagnosis vs underdiagnosing the patients. (Bussing R, 2012) The parents could discuss the possibility of folk remedies like ephedra, but rather than condescending the cultural practice, validating and mentalizing the risk vs benefit scientifically could be more approachable by the families. (SE., 2006) Being culturally competent about parent’s concerns with minority background and offering them additional help and support with ADHD help seeking behavior model comprising of Variables specific to ADHD and ethnic-minority populations are integrated within the framework of a four-stage pathway model encompassing problem recognition, decision to seek help, service selection, and service use, could be benefical to eliminate the healthcare disparity in ADHD in various cultural and ethnic minority groups. (Eiraldi, 2006)

CULTURALLY COMPETENT HEALTHCARE

There is an acute need to train healthcare practitioners to provide culturally competent services to address the increasing liberalist world, attempt to eliminate existing discrepancies of services amongst various ethnic/minority groups, provide equal access and efficient care to all. Diagnostic and Statistical Management and American Psychiatric Association have generated cultural formulation for management of psychiatric illness in culturally diverse patient. Some of these are also useful for us to understand the influence on the medical illness and ways to approach with their management. Appendix: Table 1 Training healthcare providers to be culturally competent includes not just developing skills to function effectively in the context of cultural difference, but also understanding one’s own cultural bias, developing cultural knowledge thus exploring, respecting and using cultural similarities and differences to improve quality of care and patient outcomes. Explanatory model of illness are groups of questions to assess the patient’s perspective of illness and to improve the disease awareness and application of self-monitoring practices. These practices enable provider to be culturally competent and engage their patients in appropriate management considering their cultural/ethnic preferences. Most cited approaches to cultural competency include obtaining culturally competent social context review of systems, using models like ESFT model (Explanatory model, the expanded Social context of illness, attention to the patient’s fears and concerns about therapy and advocates Therapeutic contracting with patients around medication issues) enhances cross-cultural communication (Betancourt, 1999). It addresses the patient’s social and ethnic values and seeks to guide for personal healthcare choices. The ETHNIC model (Explanations of the patients’ understanding of illness; asking what Treatments patients use and expect; inquiring about alternative Healers; Negotiation of options incorporating patients’ beliefs; designing culturally appropriate Interventions; and Collaboration with patients and their support systems) engages patients in conversation about their illness and treatments including traditional, nonwestern, folk healers. (Levin, 2000) LEARN (Listening, Explanation of provider perceptions, Acknowledgement of differences, treatment Recommendations, and Negotiation of plans) emphasizes on listening to the patients with empathy and enables a negotiation between providers and patients with a patient centered approach. (Berlin, 1983)

RECOMMENDATIONS

Culturally competent training in a pediatric environment significantly enhances knowledge, awareness and to some extent skills in providing care to a culturally diverse patient population. It is strongly recommended that health care providers use culturally sensitive educational materials to educate patients with asthma and/or their families, living in urban settings to heighten adherence to proposed treatment.

Following are some recommendations to those health care providers to provide some useful strategies.

1. Pediatric education should address issues including but not limited to cultural beliefs, values, behaviors, customs, language (including health literacy), sexual orientation, religious beliefs, disability, socioeconomic status, and other distinct attributes.
   - Become aware of the health risk factors and commonly held ethno-medical beliefs of the group in your community.
   - Learn about your patient’s cultural norms regarding personal distance, gestures, eye contact and posturing, as well as symptom expression.
   - Speak directly to your patients and don’t interprets lack of eye contact as lack of interest.
   - Assess the likelihood that a patient may act on these beliefs during an illness episode.
   - Negotiate between the biomedical and ethno-medical belief systems, bridging both and trying to integrate them as much as possible or appropriate.
   - Be aware that use of an interpreter can change the dynamics of the provider-patient relationship and affect the sharing of sensitive personal information.

2. Policies and processes should include considerations of disparities between the diversity profiles of physicians and other caregivers and that of patients and families being served.

3. Promote strategies for physicians to provide effective treatments for minority (e.g., racial, ethnic, cultural, linguistic) groups.

4. Provide culturally sensitive educational materials to educate patients and families with asthma, diabetes, ADHD, Obesity, cancer and specifies disease states to promote cultural understanding of illness, treatments could heighten adherence, psychosocial aspects of recovery.

5. Pediatricians, Child and Adolescent psychiatrists should assume a leadership role in advocating for culturally effective health care for all infants, children, adolescents, and young adults by ensuring that all public policy on these issues is in consonance with the best interests of pediatric patients and their families.

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### Appendix 1

<table>
<thead>
<tr>
<th>Cultural Identity of an Individual</th>
<th>racial, ethnic, cultural groups, involvement of culture of origin and environment, religion, SES, migrant background, sexual orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Conceptualization of Illness</td>
<td>influence of cultural belief’s on experience, conceptualization and expression of symptoms, includes cultural syndrome, idioms of distress, explanatory models of illness, emotional norms, perceived severity, meaning of distressing experiences and methods of coping.</td>
</tr>
<tr>
<td>Psychological Stressors and cultural features of vulnerability and resilience</td>
<td>(key stressors and supports in the socio-cultural environment such as religion, family and social supports). Modulated by cultural interpretation, family structure, developmental task and social context, level of function, disability and resilience in the context of persons cultural group.</td>
</tr>
<tr>
<td>Cultural features of the relationship between the individual and the clinician</td>
<td>(dynamics of difference based on cultural, socioeconomin, language and soial status that may cause differences in communication and influence diagnosis and treatment. Includes experiences of discrimination and racism that impact on trust within the clinical encounter, problems in eliciting symptoms and misunderstanding their cultural significance and difficulty with therapeutic alliance.</td>
</tr>
<tr>
<td>Overall cultural assessment</td>
<td>It Summarizes the implications of all the above 4 aspects for diagnosis, plan of care and other clinical relevant issues.</td>
</tr>
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</table>

**REFERENCES:**


Over the past three years, with funding from the NJ Department of Children and Families, Hackensack Meridian Health has successfully established the Pediatric Psychiatry Collaborative (PPC) across 20 counties in New Jersey, spanning the north, central, and southern parts of the state. A ninth Hub, in Essex County, managed by Rutgers University Behavioral Health Care, ensures every county has improved access to pediatric mental/behavioral health care.

As a mental and behavioral health consultative and referral support program, the PPC aims to improve the comfort and competency of pediatricians in identifying and managing children with mental/behavioral health and substance use concerns. The core elements of this collaborative care model include primary care provider education, timely access to consultation, appropriate referral, and care coordination. The program, now entering its fourth year, comprises over 470 participating physicians. These participating pediatric primary care providers and pediatric subspecialists have to date, conducted over 110,000 screenings for behavioral health disorders, and over 5,000 patients have received mental health consultation services via the PPC Hubs. The regional hospital-based PPC Hubs include Hackensack Meridian Health sites at Hackensack University Medical Center, Palisades Medical Center, and Jersey Shore University Medical Center, as well as a site at St. Peter's University Hospital; Atlantic Health System sites are at Goryeb Children's Hospital and Newton Medical Center; and Cooper University Health Care sites are located at Cooper University Hospital in Camden and Pennsville.

PPC data indicate that the children and families of New Jersey and health care teams that care for them are benefiting from PPC Hub services. Enhanced use of screening tools by participating pediatric providers is helping to ensure early identification of mental, behavioral and/or emotional health concerns and provide support for necessary referrals/linkages to community resources. Earlier interventions are key in preventing secondary health issues.

In partnership with the eight current PPC Hubs in Hackensack Meridian, Cooper, and Atlantic Health Systems, a strong Quality Improvement (QI) infrastructure and capacity is now also in place through NJAAP. The American Board of Pediatrics (ABP) approved, Mental Health Collaborative (MHC) awards 25 Part 4 Maintenance of Certification (MOC) points to participants who register for the PPC and agree to undertake a deeper level of training and practice-level change.

The 66 pediatric practices engaged in the NJAAP MOC quality improvement program over the past three years have impacted an average of 1,244 families per month per practice and 492,690 families have been served during the MOC program overall. The results from the most recent MHC Sustainability Survey (surveying responding practices from the first two years) indicate that 85% of practices surveyed have sustained or exceeded their mental/behavioral health screening practices. In addition, 84% of practices answering the survey reported using the PPC Hub as their go-to source of referral.

"Yes, we've had a couple of patients who've been able to be seen right away by [the Child and Adolescent Psychiatrist] who has come back with some recommendations for us and resources for the family. But the biggest thing has been having that availability from the psychiatrists." — Participating Pediatrician

Atlantic Health Hub @ Newton Medical Center
Atlantic Health Hub @ Goryeb Children's Hospital
Hackensack Meridian Hub @ Hackensack University Medical Center
Hackensack Meridian Hub @ Palisades Medical Center
Hackensack Meridian Hub @ Saint Peter's Family Health Center
Hackensack Meridian Hub @ Jersey Shore University Medical Center
Cooper Hub @ Cooper University Medical Center
Cooper Hub @ Pennsville

Essex County served by Rutgers University Behavioral Health Care.
More information on the Essex Hub can be found here: http://ubhc.rutgers.edu/services/children_family/EssexHub.html

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In this brief, Sarah Elfanagely, MD, of Totowa Pediatrics, Charles Flores, MD, FAAP of Pediatrics Day & Night, and Tin Chen, PA-C, of Future Pediatrics share firsthand knowledge of their participation in the PPC and how it has impacted their respective practices. All three providers recently completed the additional Mental Health Collaborative Maintenance of Certification (MOC) instruments. Positive screens led her to discuss PPC Hub services with the patient's mother, thereby allowing her to make an informed decision about her son’s care. Upon receipt of family consent, Dr. Elfanagely referred the patient to her regional PPC Hub, AtlanticHealth Hub at Goryeb, to confirm ADHD and anxiety disorder diagnoses.

Dr. Elfanagely notes that without PPC Hub guidance and assistance, she would have likely advised patients and their families to contact their insurance companies for mental health support services. Fortunately, she can connect patients to necessary care services because of her participation in the PPC, where a child and adolescent psychiatrist (CAP) is available for diagnostic evaluation and medication consultation, and licensed social workers and psychologists are available to facilitate referrals to appropriate services in the community. The PPC is not insurance-based; that is, regardless of patients’ insurance status, services rendered by the mental and behavioral health professionals at the PPC Hub are free of charge, including intake, referral to appropriate services in the community, care coordination and follow-up, as well as one-time evaluation by a CAP when necessary.

The chain reaction of support begins with pediatricians letting patients and their loved ones know that help is available and accessible. The PPC Hub maintains readiness and is fully equipped to assist pediatricians find the most appropriate treatment or intervention that is needed for the family. Concerning her 10-year-old patient, Dr. Elfanagely wants happiness and better school performance for him, and the PPC Hub continues to keep Dr. Elfanagely well-informed of her patient’s progress. While some have the perception that PPC participation may be “labor intensive”, as Dr. Elfanagely presumed, she is quick to mention that the impression is not entirely accurate. Rather, she terms the program as a new outlet that is “extremely helpful” and credits the PPC for its attention, support, and services toward the mental health betterment of her patients.

Dr. Flores notes his experience with the PPC Hub as valuable for both his patients and practice team members. “The Hub is benefiting our patients by making access to psychiatric help more efficient. We are able to get those patients who are in need of seeing a psychiatrist into one through the Hub in a timely fashion.” A core benefit of the PPC regional Hubs is that they offer timely access, usually within two weeks, to a psychiatric evaluation when it is deemed necessary. Dr. Flores recalls “an amazing positive turnaround” with a middle school patient, who had been dealing with severe anxiety before receiving support from a Hub-affiliated child psychiatrist.

Concerning PPC Hub support, relief is especially felt by patients’ families. And “without the Hub” says Dr. Flores, “our practice and the families we work with did not know the breadth of services available in the community to them: the Hub helps organize the process and makes the families as well as our practice more aware of what’s available. That gives a sense of hope and control to a struggling family – it helps them take the first step forward to healing. That first step is the hardest step.” Prior to his participation in the PPC, Dr. Flores describes the process of connecting patients to mental/behavioral health services as “very frustrating . . . for our practice and our patients’ families given the complexity of the health care payer system we work in.”

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Part 4 Program through NJAAP.

During our interview, Dr. Elfanagely highlights the case of a 10-year-old patient who initially came under her care for poor school performance. She screened for mental/behavioral health concerns using the Pediatric Symptom Checklist (PSC) and Vanderbilt Assessment Scale, standardized validated instruments. Positive screens led her to discuss PPC Hub services with the patient’s mother, thereby allowing her to make an informed decision about her son’s care. Upon receipt of family consent, Dr. Elfanagely referred the patient to her regional PPC Hub, AtlanticHealth Hub at Goryeb, to confirm ADHD and anxiety disorder diagnoses.

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Concerning PPC Hub support, relief is especially felt by patients’ families. And “without the Hub” says Dr. Flores, “our practice and the families we work with did not know the breadth of services available in the community to them: the Hub helps organize the process and makes the families as well as our practice more aware of what’s available. That gives a sense of hope and control to a struggling family – it helps them take the first step forward to healing. That first step is the hardest step.” Prior to his participation in the PPC, Dr. Flores describes the process of connecting patients to mental/behavioral health services as “very frustrating . . . for our practice and our patients’ families given the complexity of the health care payer system we work in.”
The positive reports from patients accessing PPC Hub services are not only rewarding for Dr. Flores and his practice to hear, but also imply a practice dedicated to the whole health of patients. “Caring about your patient means caring about the WHOLE of your patient: mind, body, and spirit...all are intertwined and work together to create good health.” Dr. Flores’ participation in the NJAAP MOC program has helped his team reach nearly a 100 percent screening rate using standardized screening tools for developmental, behavioral, and mental health issues. While verbal surveillance for mental/behavioral health concerns was once the norm at Pediatrics Day & Night, Dr. Flores affirms that it is “not nearly as effective and accurate as standardized screening tools such as the SWYC (Survey of Wellbeing of Young Children) and PSC screening forms.”

At Future Pediatrics, participation in the PPC and MOC have enhanced mental/behavioral screening a lot. Mental health screening, especially among patients aged 6 months and older, is now routine for Ms. Chen and her practice team. Before participation in the PPC, patients in need of mental/behavioral health services were referred to the ‘local psych,’ shares Ms. Chen, but the process was frustrating. She cites: “long wait [times to see a psychiatrist]; stigma with mental health; parents don’t drive; [and] immigration issue[s]/concerned about child protection involvement” as once barriers to care coordination. Now, “having the Hub call the parents, it allows more access to mental health specialist[s] in a timely manner and having a psychiatrist on call helps with medication management.” She continues with, “often times mental health referrals are not followed through when it’s left for the parents to call the specialists. Many parents are either lost when it’s time for them to make the phone call, scared that anything to do with mental health would result in their kids taken away or themselves being deported.”

Future Pediatrics primarily serves a low-income population, and for those patients and their families dealing with economic hardship along with mental and behavioral health challenges, the PPC Hub offers some consolation that support is out there. If a family feels anxious about seeking out support services, Ms. Chen confirms, “they don’t need to make any phone call.” They simply need to be under the care of a pediatrician participating in the PPC.

Practice teams are committed to learning and employing efforts to improve access to mental, emotional, and behavioral health care in their communities. The MHC quality improvement component is transforming practice protocol to identify children with mental, behavioral and/or emotional delays or disabilities earlier and ensuring the children identified and their families get connected to both clinical and nonclinical services that help to improve health outcomes. The QI efforts become part of routine protocol in the pediatric practice, enable sustainability, and create a cohort of pediatricians who can help to mentor future participants.

The integrated child mental health delivery system provided through the PPC allows patients to experience easy access to initial and ongoing mental/behavioral health care, assists pediatricians with patient care through consultative support, referral, and care coordination, and ultimately, supports healthy child development.

For more information and to register for the Pediatric Psychiatry Collaborative, please visit our website: www.njaap.org/programs/mental-health/PPC. For more information about the Essex Hub, please visit: www.ubhc.rutgers.edu/services/children_family/EssexHUB.html.

“Huge benefits. A lot of parents have come back to me and said ‘thank you so much, my child finally got an appointment;' they are happier. We providers are happier because it is less confusing to us when we have a patient with mental health issues; we’re very happy with the program. I am also happy when they send me the report from the Hub on how the patient is doing. I never used to get a report on the patients. It’s good for the patient and good for the providers.”

—Participating Pediatrician
In a community like ours, a great deal of time is spent treating illness, but ultimately, we strive to prevent it. Who are we, and what comprises our community? DePaul Center Pediatrics is an inner city primary care practice located in Paterson, New Jersey. As part of St. Joseph’s University Medical Center, we serve a diverse and underserved population of predominantly Medicaid and Charity Care patients. Our staff includes our Director of Community Medicine, Carmen Mallamac, MD, 6 Pediatricians, 1 Adolescent Medicine physician, and 1 Pediatric nurse practitioner, supported by our nursing and clerical staff. Vaccination is a large part of illness prevention in the pediatric population. Although vaccinating young patients is what first comes to mind when we think of immunizations, we have an emerging adolescent disease prevention opportunity with the recommended vaccines for meningococcus, pertussis, and the human papillomavirus (HPV), in addition to a teen’s annual influenza vaccine.

DePaul Pediatrics has consistently worked to build support for increasing our adolescent immunization coverage rates. When assessing where our greatest need were in 2016, Silvia Blaustein, MD our Adolescent Medicine physician, identified HPV vaccination rates as an important area for our quality improvement (QI) efforts to improve the health of our patients. Initially, efforts focused on teens ages 13–17, and following multiple interventions, including examining office flow and communication between staff and patients; there was a noted rise in vaccination rates. This success was noted in both the initiation and completion of the series. The major improvement we discovered was an increase in the number of patients who started the series. Yet, the rate of the completion of the series within the appropriate time interval was considerably lower. This led to the next phase of our improvement work where we questioned how to motivate our patients to return for their second and third doses and thus complete the series. (At this time the series still included 3 doses for all ages.) Our major intervention at the time was the implementation of a recall system through our electronic medical record (EMR) that alerted the nursing staff to send reminders to the patients when it was time for their next dose.

By 2017, we saw increased success with this age group and when assessing our data, we decided to initiate the conversation at a younger age, focusing on the 11–12 year-old population to reach the Healthcare Effectiveness Data and Information Set (HEDIS) measure of completing the HPV series by the age of 13 years.

Our strategies to capture this younger age group focused on speaking to patients and their parents about the HPV and the vaccine, and stressing the vaccine’s cancer prevention properties. This was introduced at the 11 and 12 year well visits at which time we were already discussing the meningococcus and pertussis vaccines. Between the Fall of 2016 and Fall of 2017 the results were striking. Overall, HPV dose initiation among the 11-12 year age group increased from 36% to 68%.

Among females, series completion rates jumped from 6% to 23%. In males, initiation dose rates climbed from 36% to 64% and series completion rates increased from 7% to 23%. During this time, the 2-doses series was introduced.

In January of 2018, St. Joseph’s Chairman of Pediatrics, Michael Lamacchia, MD, was approached about having DePaul Pediatrics participate in a national American Academy of Pediatrics (AAP) collaborative pilot on HPV prevention called the HPV ECHO Project. The project seemed in perfect alignment with our ongoing efforts focusing on increasing immunization rates in the younger age group – those who are more likely to come for well visits. The Extension for Community Healthcare Outcomes (ECHO) project serves as a forum for healthcare professionals to learn and improve their QI skills and self-efficacy around HPV vaccination. We assembled a team of attending physicians, residents, and a nurse practitioner, along with our nursing and clerical staff, to spearhead the initiative. This coincided with our involvement in the HPVc Project, whose main focus was improving communication skills with parents and teens, and to
emphasize the HPV vaccine as an effective cancer prevention protocol. This dovetailed perfectly with our stated goal to increase our overall HPV vaccination completion rates. Between both projects, we were able to immerse an expanded team—from our front staff, to our nurses and provider—in this effort that also incorporated a point person to offer their role-specific perspective on strategies for increasing rates and sustaining gains to improve the health of our teens.

To complete the project, Plan-Do-Study-Act (PDSA) cycles were utilized and small changes were made that were constantly evaluated by the team and practice at large for their efficacy. One example of a simple PDSA cycle was checking the immunization status of the patient at every visit and updating them appropriately, instead of limiting immunizations to just well visits. Another intervention was to document refusals, and if the parent or patient requested to delay the vaccine to another time, we asked the provider to document the plan to vaccinate in the chart for the next visit. The HPV ECHO and HPVc training team informed us that the current Advisory Committee on Immunization Practices (ACIP) recommendation on HPV noted the vaccination is approved for initiation at age 9, and as a part of these projects we decided to determine how receptive this age group—patients and parents—would be to initiating the vaccine.

Our first PDSA cycle was to establish the “buy-in” of the providers and their feelings towards the HPV vaccine in general. The response was overwhelmingly positive regarding the vaccine, and our second PDSA cycle was to provide staff with the reference to the ACIP recommendation, and gather opinions regarding the initiation of the vaccine between the ages of 9-12 as a standard of care. Some concern arose about the Vaccines for Children program (VFC) because in the past the vaccine was approved for ages 11 and up. There was also concern about what the parental response would be to giving the vaccine at a younger age. Because the majority of our patients fall into this vaccine program, we needed to reach out to VFC and the New Jersey Immunization Registry (NJIIIS) and ask this question. We verified that the HPV vaccine was accepted at the age of nine as the first dose in the series. The providers therefore agreed to a trial of offering the vaccine at a 9 year old visit over the next week.

On the premises of small changes, we decided on a 1 physician-1 patient-1 day approach. Our first patient was a huge success. When the MD offered the vaccine the child responded “oh they told us this at school, if we get it when we are younger we need 2 shots not 3!” He told his mom he wanted to get it that day so he didn’t have to get an extra shot. An unforeseen barrier during this cycle of change was that the nursing staff questioned—correctly so—giving the vaccine at that age, as we had never done it before. We quickly recognized the need to provide office wide education emphasizing the efficacy of the HPV vaccine as cancer prevention, and re-educate staff on the recommended ages and dosing schedule of the vaccine. While at the beginning of the year our initial target was at the 11 to 12 year old well visits, the new goal was to offer it to our patients at the 9 to 10 year old visit as well. It is difficult to introduce a new and different idea when a practice is so accustomed to doing something one way, so to remind ourselves to discuss and offer the HPV vaccine at these visits, two of our residents Drs. Douaa Khalil and Anuruda Setlur created an infographic, shown on Chart 1, that was posted at the nurses station, in the physician room, and throughout the office to remind both the providers and patients alike to ask about and discuss the vaccine.

Chart 1

Through the following months serial internal record reviews were completed comparing the ages of our patients at initiation from 2016-2017 and through to 2018. There was an upward trend in the percentage of patients completing the series at a younger age, and with that an increasing percentage of patients who met the HEDIS goal of vaccination by 13 years of age.

During discussions pertaining to sustaining efforts moving forward, we concluded that the underlying foundation to the success of our quality improvement measures over the past 2 years—especially among a transient and underserved population—was our heavy reliance on consistent conversation and education—with providers and families. Ideally the conversation begins before the time of the intervention through anticipatory guidance, when the plan for the child’s upcoming visit is offered to the patient and their parents. We want families to feel like they are equal partners in managing their children’s health. The conversation then passes off to the clerical staff to introduce with parents when they called to make their children’s appointments to assure their child is up-to-date on his/her immunizations during this visit. In subsequent PDSA cycles, we tested and strengthened our communications efforts with patients and families, beginning with the nursing staff, who when rooming patients discussed the plan for the visit and recommended vaccines and then then the provider to offer the vaccine and answer any and all questions regarding its efficacy and importance to the individual child’s health. Out test cycles clearly illuminated that any break in this chain of communication can adversely affect our patient’s decision to accept immunization recommendations.

As a practice we decided to implement a standing order for HPV vaccination for ages 9 to 21 years based on the ACIP recommendation to ensure success in initiating and completing the immunizations of our patients at the appropriate ages. We learned that in order to achieve high

continued on page 50
immunization rates, we needed to increase patient access. This was accomplished through three important steps: continued use of nurse visits to reduce missed opportunities to vaccinate, standing orders, and a strong commitment to schedule patients’ next nurse visit to ensure series completion.

Around the same time, we were asked to report our HPV series completion rate for females and males ages 13–15 seen in the last 24 month period. We ran a report of all patients seen in that age group during that time frame, and our rates are seen above on Chart 2. We were encouraged to see that we have met the Healthy People 2020 goal for that age group of having 80% of patients complete the vaccine series.

It takes a village to provide patients with the tools they need to live a healthy life and every member of the healthcare team plays a vital role in understanding and advocating for the health of our patients. Through our participation in the ECHO and the HPVc projects and our ongoing Quality Improvement work, we have empowered our staff and our patients to do just that.

**Chart 2**

**HPV Immunization Rates:**

<table>
<thead>
<tr>
<th>HPV</th>
<th>Completed</th>
<th>Initiated</th>
<th>Needed</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>83.20%</td>
<td>2%</td>
<td>10.30%</td>
<td>4.50%</td>
</tr>
</tbody>
</table>

**NJAAP HPV ECHO**

Project ECHO® (Extension for Community Healthcare Outcomes) is an innovative hub and spoke telementoring program that connects a multidisciplinary team of experts (hub) with primary care providers in local communities (spokes). Together, the experts and the primary care providers build a virtual “knowledge network” whereby participants learn from each other gaining access to evidence-based and capacity-building resources. The AAP HPV ECHO monthly sessions include a brief presentation by an HPV expert, followed by participants presenting their quality improvement (QI) work for discussion and problem-solving guidance. Through regular attendance, participants receive mentorship and grow their QI skills and self-efficacy around HPV vaccination.

**Frequently Asked Questions**

What are the requirements for primary care practices to participate in the AAP HPV ECHO?

- Create a core project team, including a lead physician
- Complete registration materials: practice roster and an AAP HPV ECHO needs assessment outlining topics of interest
- Complete one (1) to two (2) case presentation forms prior to a selected teleECHO session(s) in preparation for group discussion
- Actively participate in eight (8) monthly teleECHO sessions (ie, ask questions, present on QI efforts), starting January 2018
- Complete post-teleECHO session survey after each teleECHO session (1 per practice)
- Complete a retrospective pre-survey at the end of the initiative
- Complete eight (8) data cycles within the nine (9) month initiative

Will AAP HPV ECHO offer Maintenance of Certification (MOC) credit?

- An application to offer MOC Part IV credits to AAP HPV ECHO participants is currently under official review

If MOC Part IV credit is offered, what are the completion requirements?

- Participation in the nine (9) month initiative
- Identify changes in practice that can be made to improve HPV vaccination rates, and engage in ongoing tests of change via plan, do, study, act (PDSA) cycles
- Submission of eight (8) data cycles (1 per month) via the AAP’s Quality Improvement Data Aggregator (QIDA) system
- Participation in eight (8) practice QI team meetings/project “huddles” and submission of an attendance report via Survey Monkey (Please Note: Practice QI team meetings are held separately from the teleECHO sessions)

Where can I go to learn more about the ECHO model?

For more information, please visit: [www.aap.org/projectecho](http://www.aap.org/projectecho)

For More Information on the AAP HPV ECHO Contact:
Jake Sathmary | jsathmary@NJAAP.org
Let’s be healthy together.

The Bristol-Myers Squibb Children’s Hospital at Robert Wood Johnson University Hospital
866.66.BMSCH

Children’s Hospital of New Jersey at Newark Beth Israel Medical Center
973.926.7280

Children’s Specialized Hospital
888.CHILDRENS

Matthew J. Morahan III Health Assessment Center for Athletes
973.322.7913

The Unterberg Children’s Hospital at Monmouth Medical Center
732.923.7250

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Case Report: Late Onset Group B Strep Meningitis Presenting as Isolated Cervical Lymphadenitis

Puthenmadam Radhakrishnan, MD, FAAP
Bellevue Pediatrics
Ewing, NJ
Arvind Radhakrishnan MS II., St George’s University, Grenada
Justin Joy MS II, St George’s University, Grenada

Abstract
Case of 7-week old presenting as cervical lymphadenitis with fever. Work up resulted in a diagnosis of late onset Group B Strep Meningitis. Review of literature resulted in one previous report of late onset group B sepsis (bacteremia), suggesting this a rare occurrence. Presenting a case report with discussion.

Introduction
Group B Strep Infections can result in early or late onset disease; early disease is usually associated with vaginal carriage in mothers and vertical transmission to the neonate, and Meningitis is commonly associated with late onset disease. This case is being presented for its unusual presentation. Over the last few years, multiple recommendations have led to a shift in the evaluation and management of infants with fever, hence requiring a heightened vigilance for late onset group B strep disease.

Case Description
A 42-day old infant presents to the emergency room with a complaint of swelling to the right side of the neck. The mother shares that the baby cries when moving his head, and has been fussy for the past few hours. Mom states that no one at home is ill, and that the family owns three pet cats.

Birth history: 42 weeks gestation, c-section for failure to progress. Group B strep screen in mother was positive and indicates that she was treated appropriately.

Physical exam: Seven-week old fussy, febrile infant. Vitals: rectal temp 101.3˚F. Anterior fontanelle flat, Tympanic membranes clear, and no oral lesions. Swelling noticed to the right side of the neck in the submandibular region. Mass soft, palpable, no fluctuance, and no erythema to the skin.

Studies done included CBC which showed: a white cell count of 28,100, Hemoglobin 10.1, platelet count of 462,000 neutrophils 72, lymphocytes 15, bands 10. BMP and urine analysis had no abnormalities. Blood and Urine cultures were obtained. Ultrasound of the neck revealed bilateral cervical lymphadenopathy with right larger than left. Lumbar puncture was performed, which showed clear and colorless fluid and 2 wbc. However, cultures at 24-hours showed Gm Positive cocci identified as Grp B Strep. Infant had been started on ceftriaxone and ampicillin empirically in the emergency department and then switched to Penicillin G after sensitivities resulted. Treatment was continued for 14 days. Repeat Lumbar puncture was negative for cultures. MRI of the brain and hearing ABR testing was normal before discharge.

Discussion
Late onset GBS is seen in 0.33 per 1000 live births, with meningitis manifesting in 25.8% of those cases. Group B strep infection in infants is well known. There have been reports of Group B Strep Cellulitis—Adenitis in infants but associated CNS involvement—meningitis is not well known. In this case report there was no associated cellulitis. Late onset GBS with lymphadenitis is a rarer manifestation of GBS infection which shares features with the more commonly seen GBS with cellulitis adenitis syndrome. As was noted in 2003 by Fluegge et. al., the presence of lymphadenitis in the absence of apparent cellulitis suggests an etiology other than lymphatic spread.

In this case study however blood cultures did not point to a hematologic spread of the infection either.

Cellulitis in infants is most often caused by Staphylococcus aureus, or Hemophilus influenzae Type B or Group A beta hemolytic streptococcus. There has been mention that group B strep infections should be considered in younger infants with cellulitis of the face associated with adenitis.

Over the last few years, robust discussion has emerged on how best to evaluate an infant with fever. Current recommendations have narrowed the use of lumbar puncture from what had been 90-days of life to now clinical evaluation and decreased to 4–6 weeks of life. Given the prevalence of CNS involvement by bacterial agents that cause neonatal infections, use of lumbar punctures in sick infants is necessary in order to arrive at a diagnosis and prevent adverse sequelae.
Conclusion

Group B Strep infections in neonates and infants is a well recognized and anticipated serious infection. Protocols on management of fever in neonates and infants are part of the training that pediatricians are comfortable with. The recognition of unusual presentations however should always be looked out for. Presentations as meningitis, pneumonia, bacteremia and cellulitis are usual presentations, however, a review of literature shows that a presentation such as this as a lymphadenitis is unusual. It is important to remember physicians should be aware of spread of Group B strep infections with possible meningeal involvement in late onset disease even when the presenting symptoms are not that of just fever and irritability.

References


Dairy’s Role in Sustainable Nutrition

LaChell Miller, MS, RD, CC
Nutrition Specialist
American Dairy Association North East

Food insecurity is one of the major global issues of our time. With a global population of 7 billion people (and counting), the United Nations Food and Agriculture Organization projects that food and feed production will need to increase by 70% by 2050 to meet global demands. The concept of sustainability, as it relates to our food systems, is an integral component to providing solutions to this global issue. Sustainable food patterns are defined as being nutritionally competent, economically affordable, socially adequate, and environmentally friendly.

A study published by Adam Drewnowski looked very closely at how to define sustainable foods and food patterns. It also analyzed how dairy fulfills 3 out of the 4 principal domains of sustainable food patterns, including nutrient-rich, affordable, and accessible. Modern dairy farming practices are continuously working towards lowering the impact on natural resources and the environment. Some key takeaways from the study include:

- Sustainable foods and food patterns need to be nutrient-rich, affordable, accessible, and sparing of the environment. Very few food groups satisfy all 4 domains.
- Trade-offs need to be made. Nutrient-rich diets tend to have higher environmental costs; what is healthiest for people may not be optimal for the planet and vice versa.
- Milk and dairy products are an economical source of nutrition, providing the lowest cost of dietary calcium compared to the calcium cost per penny from all other major food groups.
- Milk and dairy products are the only food group that provide both high-quality protein and calcium at a relatively low energy cost.

In addition to the research article, National Dairy Council has two additional resources for your reference including, Honor the Harvest as well as Dairy as a Driver of the Sustainable Development Goals infographic

For more information on dairy’s role in sustainable nutrition, contact LaChell Miller via email at lmiller@milk4u.org or by calling 215-840-1285.
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IF THE ANSWER TO THE FOLLOWING QUESTIONS IS YES . . .

- Has your practice experienced any difficulty connecting families to Social Workers, Psychologists and Child & Adolescent Psychiatrists?
- Have your families expressed frustration over long delays in accessing mental/behavioral health services?
- Can your practice benefit from learning the best methods and strategies for screening, identifying, referring and care-managing children and adolescents with mental/behavioral health issues?

. . . THE PEDIATRIC PSYCHIATRY COLLABORATIVE (PPC) CAN HELP

Provide access to a Child/Adolescent Psychiatrist for Diagnostic & Medication Consultations

Arrange an initial appointment with a Child/Adolescent Psychiatrist for urgent cases, regardless of family’s insurance

In the early identification of mental/behavioral health concerns using standardized screening tools

Connect you with Psychologists and Licensed Social Workers to support care management and identify resources for children in your practice

To Date:
- 498 pediatric primary care providers are participating in 8 Hubs across NJ.
- 115,300 patients have been screened for mental/behavioral health concerns.
- 5,300 patients have been provided services for mental/behavioral health concerns.

Atlantic Health Hub @ Newton Medical Center

Atlantic Health Hub @ Goryeb Children’s Hospital

Hackensack Meridian Hub @ Hackensack University Medical Center

Hackensack Meridian Hub @ Palisades Medical Center

Hackensack Meridian Hub @ Saint Peter’s Family Health Center

Hackensack Meridian Hub @ Jersey Shore University Medical Center

Cooper Hub @ Cooper University Medical Center

Cooper Hub @ Pennsville

Essex County served by Rutgers University Behavioral Health Care.

More information on the Essex Hub can be found here: http://ubhc.rutgers.edu/services/children_family/EssexHUB.html

For more information on joining a regional PPC Hub in your area, email MHC@njaap.org, call 609.842.0014, or register online at http://njaap.org/programs/mental-health/ppc/