

Michigan State University  
College of Human Medicine

**Pediatrics Clerkship Program**

PEDIATRIC ORAL EXAM  
STUDENT GUIDE  
2009-2010

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DEPARTMENT OF  
**Pediatrics & Human Development**

*Advocacy • Research • Education • Patient Care*

**CASE #1**

Carrie, a 16-year-old female, is in your office with her mother for a new patient exam. She wants “pills for my skin” and a physical for track. PMH is significant for childhood asthma, which she has “grown out of”. FH is positive for a father and paternal uncle with coronary angioplasty before 50. Her mother expresses some concern about Carrie’s nutritional habits, (“lots of junk food”), and frequent arguing and some defiant behavior around issues of clothes, dating and curfew. ROS is positive only for frequent shortness of breath after vigorous exercise. During the “HEADS” portion of the history, after her mother has left the room, Carrie admits to smoking 4-5 cigarettes per day, and she tells you that several of her friends use alcohol and marijuana. Carrie has a steady boyfriend of 6 months and informs you that they are “talking” about having sex. She is interested in birth control. She is a “B” student and co-captain of the track team. As you are concluding the interview, Carrie asks you how she can lose body fat so as to improve her track performance. By general observation, Carrie appears well and normally grown.

- 1. Based on what you have initially learned, what further information do you want to know?**
- 2. Is Carrie’s behavior at home indicative of a psychological disorder? How would you determine this?**
- 3. What focused areas of the PE are important to emphasize, in light of her presenting concerns and history?**
- 4. Is a pelvic exam indicated at this visit? Why or why not?**

On physical exam, Carrie is Tanner 5 breast and Tanner 4 pubic hair, with height at the 25<sup>th</sup> percentile and weight at the 15<sup>th</sup> percentile. PE is remarkable only for comedonal acne on the face and chest with some areas of inflammation; remainder of PE is normal.

- 5. What problem list would you construct for Carrie’s chart at this time?**
- 6. What tests, if any, are appropriate at this time?**
- 7. After you leave the exam room, Carrie’s mother asks you if her daughter is having sex with her boyfriend. How do you respond?**
- 8. What specific therapies, if any, would you prescribe at this time?**
- 9. What routine health maintenance/patient education is appropriate at this time?**

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**Case #2**

An 18-month old Caucasian male is in your clinic for a new patient evaluation. There are no concerns regarding his current health. Developmental screen is normal for age, and he is at the 50th percentile for height and weight. A fingerstick hemoglobin is 9 g/dL.

1. **What additional information would you obtain from the mom at this time?**
2. **Please identify the physical examination areas that you would like to focus on.**
3. **You obtain a complete blood cell count by venous sample. The hemoglobin is 9 g/dL. The MCV is 68. The WBC and platelet counts are normal. What is your differential diagnosis? What is the most likely diagnosis?**
4. **What would your differential diagnosis include if the MCV had been 80? What if the MCV had been 110?**
5. **What would be a cost effective work-up for this patient at this time (presuming an MCV of 68)?**
6. **How does a reticulocyte count help with the classification of anemia?**
7. **What is your therapeutic plan at this point? What dietary counseling would you give to this family? When would you expect to see improvement?**
8. **You repeat a hemoglobin one month later and it remains a 9 g/dL. What is your differential diagnosis at this point?**
9. **How would you proceed with a work-up at this point?**
10. **If the initial hemoglobin value on this patient was 4.5g/dL and the patient was clinically stable, would you transfuse this patient with RBC's? Why or why not?**
11. **Two months later on follow-up, his hemoglobin is 10 gm and MCV is 68. Hemoglobin electrophoresis shows:**
  - Hb A<sub>1</sub> 85%
  - Hb A<sub>2</sub> 4.5% (n 1-3%)
  - Hb F 10.5% (n<2%)

**What is your diagnosis? How does this condition occur? How is it inherited and how would you counsel the family?**
12. **You want to explain the importance of preventing iron deficiency to a family who has chosen a low-iron formula for their infant. How would you justify the need for an iron-containing formula?**

**CASE #3**

A 9-year-old Caucasian male with Asthma arrives in the ER with poor oral intake and after wheezing for six hours.

1. **What additional information would you like to have?**
2. **What are the physical examination areas you would like to focus on?**
3. **What is the Differential Diagnosis?**
4. **What tests would you order in the E.D.?**
5. **Describe your initial efforts to stabilize this patient.**
6. **If initial efforts were unsuccessful what additional ER treatments would you consider?**
7. **When would you admit this patient?**
8. **Write your initial diagnosis and therapeutic plan. How would you know if it is failing?**
9. **Discuss outpatient management of asthma based on severity.**
10. **What measures can they take to prevent future episodes?**
11. **This patient is discharged and sent home. He continues to cough and wheeze – doesn't respond to treatment plan. What additional diagnostic tests would you do?**

**Additional Resource: CLIPP Case 13**

**CASE #4**

A 7-month old boy has had diarrhea and vomiting for three days.

- 1. What additional history would you like to have?**
- 2. What parts of the physical examination will you emphasize?**
- 3. In what settings would you order lab studies and why?**

You are now presented with the following clinical situation. The child has not been anywhere or done anything out of the ordinary in the last few weeks. His normal diet, which is unchanged, is Similac with Iron and a good variety of baby foods and soft table foods. He is lethargic but does recognize his mother. His heart-rate is 150/minute, capillary refill is 3 seconds, anterior fontanelle is depressed, oral mucous membranes is pink and dry. The skin turgor is poor and hands and feet are cool to the touch. You are now in the ER and the blood work is not yet back. The child weighs 8 kg.

- 4. What therapeutic intervention would you do now?**
- 5. How would you explain the following blood work?**

The blood work returns with the following values: WBC 8,100 with 45 polys, 5 bands, 40 lymphs, 5 monocytes, 3 eosinophils and 2 basophils. Hb 15.1, Hct 45.2, plt 240,000. Na 140 K 4.9, Cl 115, HCO<sub>3</sub> 11, BUN 31, creatinine 1.1 blood sugar 86.

- 6. Knowing the above information, what is your diagnostic and therapeutic plan on admission for this patient?**
- 7. Discuss the prognosis of this child's illness and at home management and preventive measures to avoid hospitalization?**

**Additional Resource: CLIPP Case 15**

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**CASE #5**

A 6-month-old African-American male has been ill for three days with fever, anorexia and vomiting. You received a call from the E.D. and, on arrival there find the following information on the E.D. sheet:

Physical examination: Temperature 104.2<sup>0</sup> rectal. Tympanic membranes are red and patient is very irritable.

Labs: CBC - WBC 3500/mm<sup>3</sup>, 74% polys, 15% bands, 9% lymph, 2% mono. Hgb 9.7 gm%. Platelets 460,000/mm<sup>3</sup>. L.P. Turbid fluid WBC 900/mm<sup>3</sup>; 78% Poly, 22% lymph. RBC-O/mm<sup>3</sup>. Glucose – 18 mg/dl. Protein – 104 mg/dl. Gram Stain – few WBC. Gram positive Cocci.

1. **What additional information would you like to have and why?**
2. **Please identify the physical examination areas that you would like to focus on.**
3. **Discuss what other investigations/tests do you need to manage this patient?**
4. **How would you explain “no organisms seen” on the Gram stain of CSF in a patient where meningitis is suspected?**
5. **What would be your interpretation if the L.P. revealed WBC, 105/mm<sup>3</sup>, 10% polys, 90% lymph, glucose 45 mg%, and protein 33 mg%?**
6. **What if the L.P. showed WBC 40 mm<sup>3</sup>, 80% polys, 20% lymph, RBC, 4000/mm<sup>3</sup>, glucose 55, and protein 45 mg? What is your interpretation?**
7. **What antibiotics would you use for this patient? For a 10-day-old with bacterial meningitis? Describe the rationale for your choices?**
8. **What would you tell parents about the morbidity and mortality of bacterial meningitis? How would you monitor this patient after discharge?**

**CASE #6**

The nurse pages you to the Newborn Nursery to examine a 6-hour old infant who has tachypnea, poor tone and has not fed well.

- 1. What further information do you need?**
- 2. What parts of the physical examination will you emphasize?**
- 3. What tests would you order?**

On examination you find a 36-week gestation AGA infant with mild respiratory distress. The pulse oximetry is 92% on 30% oxygen. Temperature is 95.8 Fahrenheit; WBC 34,000, (60 segs, 30 bands, 10 lymphocytes); H/H – 21/65; platelets-adequate. CXR – slightly hazy with increased fluid in the fissures.

- 4. How do you interpret these findings?**
- 5. What are your most likely diagnoses and what are the other possibilities?**
- 6. Discuss your basic management of this infant.**
- 7. What organisms would you be concerned about in this age group?**
- 8. At 36 hours baby's blood culture are negative, the baby does not require oxygen, a repeat chest x-ray is normal, and the patient is stable. What kind of information would you provide to the parents about the diagnosis and prognosis?**

**Additional Resource: CLIPP Case 7**

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**CASE #7**

A 24-month old child is found by the mother holding a half-empty bottle of Valium from the grandmother's purse. No one saw the child ingest the drug but they suspect this has occurred. Thirty minutes later they arrive in the Emergency Department. At the triage station the child appears to be awake and in no distress.

- 1. What further history would be important to acquire from the mother and/or grandmother?**
- 2. What focused physical examination data would be most important to know about this patient?**
- 3. What are the a) diagnostic considerations or b) problems you might encounter with this patient?**
- 4. What appropriate diagnostic tests should be performed on this patient?**
- 5. What should be the initial steps and subsequent therapy in management of this patient?**
- 6. What will you tell the mother and grandmother about health maintenance issues concerning this patient?**

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**CASE #8**

A 3-year-old boy is brought in to the Emergency Department by a team of paramedics with a reported history of a seizure for the last 30 minutes. By his mother's report, she found him on the floor near the couch unconscious and seizing and immediately called 911. On arrival, the child exhibits clonic movements of all extremities and has a rectal temperature of 98 degrees Fahrenheit.

- 1. What additional information would you like to have?**
- 2. What physical examination data would you like to focus on?**
- 3. Assuming this child has had no fever, what are potential causes of this child's problem?**
- 4. What diagnostic tests would you consider?**
- 5. What would be your initial steps in management of this patient? Discuss potential side effects of therapy and how you would anticipate and/or avoid them.**
- 6. If the patient turns out to have an idiopathic seizure disorder, what is the prognosis and how would you decide about on-going treatment and emergency treatment?**

**Additional Resource: CLIPP Case 19**

**CASE #9**

A 14-month-old child presents to the ER at 9:00 P.M. with the chief complaint of noisy breathing. On examination you note an anxious child with a respiratory rate of 32 and inspiratory stridor.

- 1. What additional information would you like to have?**
- 2. What part of the physical examination will you emphasize?**
- 3. What are the most likely differential diagnoses for this patient with upper airway obstruction? Can you think of other etiologies?**
- 4. How would you proceed if the patient was sitting in the sniffing position with high fever, drooling, and no history of a barking cough and parents had refused all vaccines in the child?**
- 5. How would you proceed if you feel the child may have laryngotracheobronchitis? What laboratory tests do you need?**
- 6. What further management would you recommend in the treatment of the child with acute epiglottitis? The child with acute laryngotracheobronchitis?**
- 7. What would you tell the parents about the prognosis of these two diseases? What education would you give for prevention?**

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**CASE #10**

A 2-year old African American girl with sickle cell disease is seen in the ED with a history of irritability and refusal to walk for the last six hours. On examination the child is fussy and her left foot is swollen. The family has recently moved to the area from Gary, Indiana and has not had a chance to find a pediatrician.

- 1. What additional information would you like to obtain from the mother?**
- 2. What areas of physical examination will you focus on?**

On physical examination, the child is mildly icteric. Chest is clear to auscultation. There is no Hepatosplenomegaly. The left foot is swollen, warm and tender. Hemoglobin is 7.6 g/dl, MCV 86, MCHC 32, WBC  $16 \times 10^3$  with 62% segs, 2% bands, 30% lymphocytes, 4% monocytes, 2% eosinophils and the platelet count is  $520 \times 10^3$ .

- 3. What additional tests would you like to order now?**

The X-ray of the left foot is remarkable for soft tissue swelling. There is no fracture or periosteal elevation.

- 4. How will you manage this child in the ED?**
- 5. What criteria would you use to admit this child to the hospital?**

On the third hospital day the child is afebrile comfortable on oral Tylenol with codeine, the swelling of the left foot has decreased and the child is ready for discharge.

- 6. What signs and symptoms of medical emergencies and long-term measures will you discuss with the mother at this time?**
- 7. What are the indications for transfusion in a child with sickle cell disease?**

**Additional Resource: CLIPP Case 30**

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**CASE #11**

Jeff is an 8-year-old boy who was referred by his teacher. She is concerned about ADHD, since he does not seem to be working up to his potential and is failing math and reading. He doesn't pay attention when she calls on him, daydreams a lot, and is often preoccupied with something else such as doodling, dropping pencils, etc.

- 1. What additional information would you like to obtain?**
- 2. What parts of the physical examination will you emphasize?**
- 3. Would you like any additional diagnostic tests?**

Psychological testing shows I.Q. of 98, easy distractibility, difficulty organizing tasks, poor at following sequential instructions, reluctance to read long passages, forgetfulness. Conners Scales are in the clinical range. Parents recently separated due to domestic violence.

- 4. What are the criteria for diagnosing attention deficit hyperactivity disorder?**
- 5. What is your differential diagnosis for this patient's problem?**
- 6. What are some suggested interventions for ADHD?**
- 7. If you start him on medication, how should you monitor medication effects? Side effects? How often should you see this patient for follow-up?**
- 8. What should you tell the parents about side effects? About long-term outcome?**

**Additional Resource: CLIPP Case 4**

**CASE #12**

You are called to the nursery to see an infant noted to be jaundiced. Over the phone, you obtain the following history – baby was born at approximately 37 weeks gestation, after premature rupture of membranes and induced labor. Mother received no prenatal care, but has had two other healthy children.

**1. What additional history do you want?**

**2. What areas of the physical exam will you focus on?**

The infant is 22 hours old, had Apgars of 8/9, and had an uneventful transition. Mom is breast-feeding and notes that baby had some difficulty latching on at first feed. Mother denies prenatal infection, drug exposure or fever. Positive history of neonatal jaundice in a sibling. Mom's blood type is O negative. Baby's blood type and Coombs are pending. On exam, the infant appears AGA for 36-37 weeks; stable vital signs, with scleral icterus and jaundice to the level of the umbilicus. There is a caput, but no cephalohematoma. No rash, petechiae or bruising. No organomegaly. There are no focal neurological signs, tone is normal, and the infant has a good suck.

**3. What is your diagnosis/differential diagnosis?**

The baby's bilirubin comes back at 7 mg/dl, (drawn at 20 hours of age). Baby's blood type is A positive. Coombs test is positive for circulating anti-A antibodies. Baby continues clinically stable, but is "pokey" during feeding.

**4. What further information and/or labs would you like immediately and during next 24-48 hours?**

At 28 hours of age, the bilirubin is 11 mg/dl. You are signing the case out to the senior resident, (you have continuity clinic that afternoon). She asks you what your plan is for this child.

**5. Explain what treatment (if any) you will initiate, and at what point.**

**6. Mom says she has read that bilirubin can cause brain damage. What will you tell her about 1) etiology of physiologic hyperbilirubinemia, 2) risk factors for kernicterus, 3) sequelae of bilirubin toxicity, 4) treatment of hyperbilirubinemia, 5) prognosis for this child, and 6) necessary follow-up?**

**Additional Resource: CLIPP Case 8**

**CASE #13**

A 4-year-old woke in the morning with fever of 102 degrees F and a few hours later rash appeared in the hip and buttock area. In the evening the child was rushed to the ER by EMS.

Physical Exam: Child is lethargic, pale, pulse rate 150 and thready, BP unobtainable by auscultation, Respiration 40 and deep. Numerous petechiae and ecchymoses over buttocks.

- 1. What additional information would you like to know?**
- 2. What other physical exam findings would you like to document?**
- 3. What steps in the ER would you take to stabilize and initiate management of this patient?**
- 4. What labs/tests will you obtain?**
- 5. What do you do if BP is still unobtainable after 20-40 cc bolus of fluid?**
- 6. What else will you monitor to determine patient's progress (or lack of progress)?**
- 7. Which antibiotics should you give and when?**
- 8. When would you use pharmacologic support in the treatment of shock?**
- 9. What will you tell the family about possible outcomes?**
- 10. What means of prevention do we have for these types of infection?**

**Additional Resource: CLIPP Case 23**

**CASE #14**

A 20-month old boy is brought to your office with a history of fever of 103.5 degrees F for last 3 days. He has not taken anything by mouth for last 12 hours. He has no history of cold, cough, vomiting or diarrhea.

- 1. What additional history would you obtain from the parent?**
- 2. What areas of the physical exam would you concentrate on at this point?**
- 3. He cries, but is consolable. What tests do you perform?**

Urine analysis shows protein 2+, WBC 50/HPF, RBC 20/HPF, Nitrites positive, Leukocyte esterase +. CBC shows WBC count of 26, Band count of 32%.

- 4. What do nitrite and leukocyte esterase positivity indicate? What is your diagnosis? What is the most common organism causing this infection? What if this patient was a neonate?**
- 5. What are the indications for admission?**
- 6. If you decide to admit this patient, what is your plan for treatment?**
- 7. If this patient was not admitted for his pyelonephritis, what oral antibiotics would you consider?**
- 8. What testing and follow-up is needed with an initial urinary tract infection? Explain indications for imaging studies if indicated.**

**Additional Resource: CLIPP Case 10**