Pediatric History and Physical Examination

HISTORY TAKING

- Formally introduce yourself by name and anticipated function in relation to the family and child
- The history usually is learned from the parent, the older child, or the caretaker of a sick child.
- During the interview, it is important to convey to the parent interest in the child as well as the illness.
- The parent is allowed to talk freely at first and to express concerns in his or her own words.
- The interviewer should look directly either at the parent or the child intermittently and not only at the writing instruments.

General Information

- Identifying data include the date,
- name, age and birth date, sex, race,
- referral source if pertinent, relationship of the child and informant
- indication of the mental state or reliability of the informant.
- It frequently is helpful to include the ethnic or racial background, address, and telephone numbers of the informants

Chief Complaint

- Given in the informant's or patient's own words, the chief complaint is a brief statement of the reason why the patient was brought to be seen.
- It is not unusual that the stated complaint is not the true reason the child was brought for attention.
- Expanding the question of "Why did you bring him?" to "What concerns you?" allows the informant to focus on the complaint more accurately. Carefully phrased questions can elicit information without prying

History of Present Illness

- The details of the present illness are recorded in chronologic order.
- For the sick child, it is helpful to begin: "The child was well until "X" number of days before this visit."
- This is followed by a daily documentation of events leading up to the present time, including signs, symptoms, and treatment, if any.
- If the child is taking medicine, the amount being taken, the name of the medicine, the frequency of administration, and how well and how long it has been or is being taken are needed.

History of Present Illness

- For the well child, a simple statement such as "No complaints" or "No illness" suffices.
- A question about school attendance may be pertinent.
- If the past medical history is significant to the current illness, a brief summary is included. If information is obtained from old records, it should be noted here or may be recorded in the past medical history

Sick Contacts

- Parents
- Siblings
- Household members
- What illness? URI etc

- Day Care Attendance

HISTORY FROM THE CHILD

- Even young children should be asked about their symptoms and their understanding of their problem.
- This also provides an opportunity to determine the interaction of the child with the parent.
- For most adolescents, it is important to take part of the history from the adolescent alone after asking for his or her approval.
- Regardless of your own opinion, obtain the history objectively without any moral implications, starting with open-ended questions related to the initial complaint and then directing the questions

REVIEW OF SYSTEMS

- The review of systems serves as a checklist for pertinent information that might have been omitted.
- Questions concerning each system may be introduced with a question such as: "Are there any symptoms related to . . .?“

- **Head** (e.g., injuries, headache)
- **Eyes** (e.g., visual changes, crossed or tendency to cross, discharge, redness, puffiness, injuries, glasses)
- **Ears** (e.g., difficulty with hearing, pain, discharge, ear infections, myringotomy, ventilation tubes)
- **Nose** (e.g., discharge, watery or purulent, difficulty in breathing through nose, epistaxis)
- **Mouth and throat** (e.g., sore throat or tongue, difficulty in swallowing, dental defects)

REVIEW OF SYSTEMS

- **Neck** (e.g., swollen glands, masses, stiffness, symmetry)
- **Breasts** (e.g., lumps, pain, symmetry, nipple discharge, embarrassment)
- **Lungs** (e.g., shortness of breath, ability to keep up with peers, cough with time of cough and character, hoarseness, wheezing, hemoptysis, pain in chest)
- **Heart** (e.g., cyanosis, edema, heart murmurs or "heart trouble," pain over heart)
- **Gastrointestinal** (e.g., appetite, nausea, vomiting with relation to feeding, amount, color, blood- or bile-stained, or projectile, bowel movements with number and character, abdominal pain or distention, jaundice)

REVIEW OF SYSTEMS

- **Genitourinary** (e.g., dysuria, hematuria, frequency, oliguria, character of urinary stream, enuresis, urethral or vaginal discharge, menstrual history, attitude toward menses and opposite sex, sores, pain, intercourse, venereal disease, abortions, birth control method)
- **Extremities** (e.g.. weakness, deformities, difficulty in moving extremities or in walking, joint pains and swelling, muscle pains or cramps)
- **Neurologic** (e.g., headaches, fainting, dizziness, incoordination, seizures, numbness, tremors)
- **Skin** (e.g., rashes, hives, itching, color change, hair and nail growth, color and distribution, easy bruising or bleeding)
- **Psychiatric** (e.g., usual mood, nervousness, tension, drug use or abuse)

PAST MEDICAL HISTORY

- Obtaining the past medical history serves not only to provide a record of data that may be significant either now or later to the well-being of the child, but also to provide evidence of children who are at risk for health or psychosocial problems.

- Past illnesses: infections, other illnesses/chronic illnesses-diagnoses and course, hospitalizations, surgeries, accidents, ER visits, medications/allergies, last medical check-up

PRENATAL HISTORY

- Age of the mother
- Health of the mother during this pregnancy: any infections (GBS, GC/chlamydia, hepatitis, syphilis, HIV, rubella, herpes) other illnesses, vaginal bleeding, toxemia, or care of animals, such as cats or other animal-borne diseases, substance abuse
- Number of previous pregnancies and their results
- Radiographs or medications taken during the pregnancy,
- Results of prenatal labs and other tests such as amniocentesis If the mother's weight gain has been excessive or insufficient, this also should be noted

BIRTH HISTORY

- The duration of pregnancy, the ease or difficulty of labor, and the duration of labor may be important, especially if there is a question of developmental delay.
- The type of delivery (spontaneous, forceps-assisted, or cesarean section), type of anesthesia or analgesia used during delivery, presenting part (if known) are recorded.
- Note this child's birth order (if there have been multiple births) and birth weight
- Condition of the child at birth, resuscitation, APGAR score if known

NEONATAL HISTORY

- Birth weight, length, head circumference
- Problems: jaundice, anemia, convulsions, respiratory problems, infections, feeding problems, excessive weight loss, birth injuries, dvsmorphic state, congenital anomalies etc
- Age at discharge, NICU stay
- Was the baby discharged with the mother?

FEEDING HISTORY

- Breast- or bottle-fed - relevant until 1 year of age
- Type of formula used and the amount taken during a 24-hour period.
- Mother's initial reaction to her baby, the nature of bonding and eye-to-eye contact, and the patterns of crying, sleeping, urinating, and defecating.
- Requirements for supplemental feeding, vomiting, regurgitation, colic, diarrhea, or other gastrointestinal or feeding problems should be noted.
- Ages at which solid foods were introduced and supplementation with vitamins or fluoride took place, as well as the age at which weaning

FEEDING HISTORY

- The age at which baby foods, toddlers' foods, and table food were introduced, the response to these, and any evidence of food intolerance or vomiting.
- If feeding difficulties are present, determine the onset of the problem, methods of feeding, reasons for changes, interval between feedings, amount taken at each feeding, vomiting, crying, and weight changes.
- With any feeding problem, evaluate the effect on the family by asking, "How did you manage the problem?"
- For an older child, ask the informant to supply some breakfast, lunch, and dinner (supper) menus, likes and dislikes, and response of the family to eating problems

DEVELOPMENTAL HISTORY

- Developmental history is included until age 3 years unless relevant for HPI or school performance

- Estimation of physical growth rate is important. These data are plotted on physical growth charts. Any sudden gain or loss in physical growth should be noted particularly, because its onset may correspond to the onset of organic or psychosocial illness. It may be helpful to compare the child's growth with the rate of growth of siblings or parents.

DEVELOPMENTAL HISTORY

- Ages at which major developmental milestones were met aid in indicating deviations from normal.
- Inquire about some representative developmental landmarks, going into more detail if indicated by age or other findings
- Age at which bowel and bladder control were achieved. If problems exist, the ages at which toilet teaching began also may indicate reasons for problems

PERSONAL HISTORY

- Patient’s relationships in family and with peers and in school
- Amount of sleep and sleep problems
- Habits such as pica, smoking, and use of alcohol or drugs should be questioned.
- Is the child happy or difficult to manage
- Child's response to new situations, strangers, and school.
- Temper tantrums, excessive or unprovoked crying, nail biting, and nightmares and night terrors should be recorded
- Question the child regarding dating, dealing with the opposite sex, and parents' responses to menstruation and sexual development.

IMMUNIZATION HISTORY

- The types of immunizations received, with the number, dates, sites given, and reactions should be recorded as part of the history.

- In addition, it is helpful to record these immunizations on the front of the chart or in a conveniently obvious place with a lot number for future reference when completing school physical examinations or when determining need for booster immunizations or possible reactions.

FAMILY HISTORY

- The family history provides evidence for considering familial diseases as well as infections or contagious illnesses.
- A genetic type chart is easy to read and very helpful. It should include parents, siblings, and grandparents, with their ages, health, or cause of death.
- If problems with genetic implications exist, all known relatives should be inquired about.

FAMILY HISTORY

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- A genetic type chart is easy to read and very helpful. It should include parents, siblings, and grandparents, with their ages, health, or cause of death.
- Family diseases, such as allergy; blood, heart, lung, venereal, or kidney disease; tuberculosis; diabetes; rheumatic fever; convulsions; skin, gastrointestinal, behavioral, or mental disorders; cancer; or other disease the informant mentions should be included. These diseases may have a heritable or contagious effect. Pertinent negatives should be included also

SOCIAL HISTORY

- Details of the family unit include the number of people in the habitat and its size, the presence of grandparents, the marital status of the parents, the significant caretaker, the total family income and its source, and whether the mother and father work outside the home.
- If it is pertinent to the current problems of the child, inquire about the family's attitude toward the child and toward each other, the type of discipline used, and the major disciplinarian.
- If the problem is psychosocial and only one parent is the informant, it may be necessary to interview the other parent and to outline a typical day in the life of the child.

PHYSICAL EXAMINATION

- Examination of the infant and young child begins with observing him or her and establishing rapport.
- The order of the examination should fit the child and the circumstances.
- It is wise to make no sudden movements and to complete first those parts of the examination that require the child's cooperation.
- Painful or disagreeable procedures should be deferred to the end of the examination, and these should be explained to the child before proceeding.
- For the older child and adolescent, examination can begin with the head and conclude with the extremities. The approach is gentle, but expeditious and complete.

PHYSICAL EXAMINATION

- For the young, apprehensive child, chatter, reassurance, or other communication frequently permits an orderly examination. Some children are best held by the parent during the examination. For others, part of the examination may require restraint by the parent or assistant.
- When the complaint includes a report of pain in a certain area, this area should be examined last. If the child has obvious deformities, that area should be examined in a routine fashion without undue emphasis, because extra attention may increase embarrassment or guilt.
- Because the entire child is to be examined, at some time all of the clothing must be removed. Except during infancy, modesty should be respected and the child should be kept as comfortable as possible.

PHYSICAL EXAMINATION

- With practice, the examination of the child can be completed quickly even in most critical emergency states. Only in those with apnea, shock, absence of pulse, or, occasionally, seizures is the complete examination delayed. Although the method of procedure may vary, the record of examination should be in the same format for all children.

- Completion of the history can be accomplished during the physical examination. Talking to the parent frequently reassures the child. Praising the young child, explaining the parts of the examination to the older child, and reassuring the adolescent of normal findings facilitates the examination.

PHYSICAL EXAMINATION

- Vital Signs: Temperature, HR, RR, BP
- Measurements: Weight, Height/Length, Head circumference
  - measure the infant supine up to the age of 2 years, and standing thereafter
  - measure head circumference in all infants less than 2 years of age and in those with misshapen heads.
  - record height, weight, and head circumference measurements with percentiles on a chart
- General appearance
- Skin
- Lymph nodes
- Head/Face/Eyes/Ears/Nose
- Mouth
- Neck

PHYSICAL EXAMINATION

- Chest/Breast
- Lungs
- Heart
- Abdomen
- Genitalia
- Rectum/Anus
- Musculoskeletal
- Back
- Neurological: CN, motor, cerebellar, sensory, cerebral, mental status, behavior pattern, age appropriate tests
- Reflexes

ASSESSMENT AND PLAN

- Presented in the form of an “impression or initial formulation
  - Problem-oriented
  - Narrative style that includes a problem list
- Problems that are ill-defined can be listed in a descriptive form and may include physical findings (RUQ mass) or symptoms (headache, anxiety etc)
- Defined medical diagnosis should be included
- “rule-out diagnoses” should be based on a reasonable degree of suspicion and must be addressed in your plan
- Indicate what you think are the likely diagnoses and evidence that supports your choice

NEWBORN EXAMINATION

- In the delivery room, a minimal examination is needed. The general appearance is noted and, at 1 and 5 minutes of age, an APGAR score is assigned
- Preferably within the first few hours of birth, an admission newborn examination is performed
- The examiner should develop a routine for the newborn examination so that critical areas are never omitted.
- The pressing question to be answered in the first examination is: "Is my child normal?" Although the order of the examination may vary, as with the history, a stereotyped order of recording should be initiated for easy retrieval of information if it is needed later.

APGAR Score

- A – appearance (color)
  - 2 Completely pink
  - 1 Extremities blue
  - 0 Blue, pale
- P – pulse (heart rate)
  - 2 HR > 100
  - 1 HR < 100
  - 0 absent HR
- G – grimace (reflex irritability)
  - 2 Cough or sneeze
  - 1 Grimace
  - 0 No response

APGAR Score

- A – activity (muscle tone)
  - 2 active motion
  - 1 some flexion of extremities
  - 0 limp
- R – respiratory effort
  - 2 good
  - 1 slow, crying
  - 0 absent, irregular
- Highest score 10
- If at 5 minutes APGAR < 8, need to do further scores at 10 minutes then 15 minutes

NEWBORN EXAMINATION

- The skin may be covered by a white, greasy, easily removable material called vernix caseosa.
- Note skin color, consistency, and hydration
- Cyanosis, jaundice, eruptions, edema, bruises, petechiae, and pallor are significant abnormalities
- Note also hemangiomas and nevi, their size and location.
- Mongolian (brown) spots over the back are not suggestive of disease, but café-au-lait spots, if they are numerous, may be a cardinal sign of neurofibromatosis
- Papules and pustules must be identified as either normal eruptions or infections.

NEWBORN EXAMINATION

- Vital signs: include temperature, heart rate, respiratory rate, blood pressure (using an apparatus for newborns) in an upper and a lower extremity, weight, length, and head, chest, and abdominal circumferences. In addition to recording these, it is essential that they also be plotted on a chart

- General Appearance: observe the movement of the four extremities, the appearance of the head and neck, body symmetry, and any gross abnormalities.

NEWBORN EXAMINATION

- FACE:
  - Unusual facies suggests dysmorphic syndromes.
  - Peripheral facial nerve palsies are common.
  - Edema of the eyelids is a result of birth processes or reaction to silver nitrate prophylaxis.
  - Sub-conjunctival and retinal hemorrhages are found frequently. Red reflex from the fundus, if not visible, indicates some obstruction in the preretinal chambers.
  - Malformation of the pinnae of the ears often is accompanied by severe congenital malformations.
  - If the nose was not found to be patent in the first examination, it should be examined at this time by passing a catheter through both nares.
  - The mouth should be reexamined for cleft palate. The neck should be examined for shortening (as in Klippel-Feil syndrome), redundant skin folds (as in gonadal dysgenesis), vertebral anomalies, cysts, sinuses, and limitation of motion (torticollis).

NEWBORN EXAMINATION

- The chest normally is barrel-shaped and smooth at birth, and expands symmetrically with no retractions.
- Unequal expansion or asymmetry suggests intrathoracic pathology such as cardiac enlargement, pneumothorax, or diaphragmatic hernia.
- The respiratory rate normally is less than 60 breaths per minute. Occasional irregularities with apnea up to 10 seconds can be normal.
- Auscultation may reveal adventitious sounds for the first 4 to 6 hours. Percussion is resonant throughout.
- If chest expansion is unequal, transilluminate the chest. Transillumination occurs with pneumothorax and occasionally with diaphragmatic hernia

NEWBORN EXAMINATION

- Maximal cardiac impulse is felt in the fourth interspace close to the sternum.
- Thrills, if they are present, usually indicate cardiac abnormalities.
- Murmurs are present in 60% of normal newborns, but the lack of a murmur does not eliminate a diagnosis of congenital heart disease.
- Brachial and femoral pulses, if they are not of equal intensity, suggest vascular anomalies such as coarctation of the aorta.

NEWBORN EXAMINATION

- HEAD
  - The fontanelle size and head circumference are variable on the first day because of molding.
  - Scalp edema (caput succedaneum) crosses the midline and may be present
  - cephalhematoma, which does not cross the midline and is caused by subperiosteal bleeding.

NEWBORN EXAMINATION: ABDOMEN

- Distention of the abdomen occurs with sepsis, intestinal or urinary system obstruction, ascites, tumors, or pneumoperitoneum.
- Scaphoid abdomen suggests a diaphragmatic hernia.
- Palpate gently. The liver's edge usually is felt 1 to 2 cm below the costal margin and the spleen tip is barely palpable.
- The bladder, if it is palpable, should be reexamined after voiding.
- Palpation of the costovertebral angle with ballottement helps to determine the size of the kidneys.
- The umbilical cord contains two arteries, which are small and thick-walled, and one vein, which is larger and thin-walled.
- A single umbilical artery is associated with an increased incidence of congenital anomalies. Erythema at the base of the cord suggests omphalitis.
- Note the patency of the urethral meatus by observing voiding and the patency of the anus either by observing the passage of meconium or by inserting a small rubber catheter

NEWBORN EXAMINATION: EXTREMITIES

- Asymmetric posturing requires careful palpation of the clavicles, shoulders, and extremities for fractures or brachial plexus injuries.
- Anomalies of the hands and feet such as webbing, polydactyly, and clubfoot are noted.
- Abduct both legs to determine any limitation of movement or instability of the hips, which is characteristic of dislocated hips.

NEWBORN EXAMINATION: EXTREMITIES

- Evaluate for congenital hip dislocation
  - Place infant in frog leg position
- Barlow Maneuver
  - adduct the hips and apply outward and backward pressure over the inner thigh
  - induce dislocation
- Ortolani Maneuver
  - abduct the hips and apply inward and upward pressure over the greater trochanter
  - reduce dislocation

NEWBORN EXAMINATION: EXTREMITIES

- Testes normally are in the scrotum of term infants.
- Determine the position and size of the urethral meatus.
- The newborn's penis is greater than 2cm in length.
- An enlarged clitoris can be confused with a small penis and requires evaluation for chromosomal sex and other abnormalities of the genitourinary system.
- The vaginal opening is inspected, and mucosal tags, imperforate hymen, and ambiguous genitalia are sought

NEWBORN EXAMINATION: Neurologic Examination

- Assess muscle tone and strength.
- Extremities normally recoil spontaneously when they are extended from a flexed position and thrash about when irritated.
- Moro's reflex, which is obtained by loud noise or sudden motion, involves abduction of the upper arms and legs, and extension at the elbows and knees, followed by flexion. Absence of this reflex indicates central nervous system depression. Asymmetry suggests extremity fracture or peripheral nerve injury.
- Neuromuscular maturity to determine gestational age: posture, square window, arm recoil, popliteal angle, scarf sign, heel to ear

NEWBORN EXAMINATION

- Ballard Score
  - Newborn maturity rating and classification
  1. Neuromuscular maturity
  2. Physical maturity

Newborn Assessment

- Term/Preterm
- AGA/LGA/SGA
- Male or female infant
- Any other diagnosis
  - Suspected sepsis
  - Hypoglycemia
  - Hyperbilirubinemia etc

Newborn : Plan

- PO feedings or IVF
- Medications
- Hearing Test
- Hepatitis vaccination
- Erythromycin prophylaxis
- Hct and glucose screen
- Triple dye for umbilical cord
- Others as needed