

MODULE 3 Pediatric History Taking and Virtual Physical Examination

OUTLINE

- A. Medical History
- B. Virtual Physical Exam (Video Call)
- C. Script for Audio Calls

A. HISTORY TAKING

“Listen to your patient, he is telling you the diagnosis.”- Sir William Osler

Telemedicine IS Medicine that we have been practicing long before the start of the pandemic. Though we use a different medium, the basic skills and mental processes required however, remain unchanged. These include gathering information by history-taking, observation, looking for patterns, coming up with differential diagnoses which we whittle down to the most-likely.

Definitely there are limitations so we should look for ways to maximize what can be done in a teleconsult. For one, we can take a full history which we know is the main source of most of our clinical decisions. Because the consult is done remotely, only a virtual physical examination is possible. We are well aware that we are unable to auscultate, percuss or palpate. But we can certainly inspect, observe and listen which give us critical information. Telemedicine challenges us, sharpen our interviewing and listening skills as well as our capacity for acute observation (which we may have taken for granted).

History taking and Virtual Physical Examination will be taught using videos.

A. HISTORY TAKING: The history will be taken following the same sequence. **The OPD Pediatric Intake form may be used as a guide.**

1. Identifying information
2. Source of the history
3. Chief Complaint,
4. History of Present Illness
5. Review of Systems
6. Past Medical History
7. Family History
8. Birth and Maternal History
9. immunization History
10. Nutritional History
11. Developmental History
12. Personal and Social History, including Environmental History.
A more detailed psychosocial history using HEADSSS format may

be needed for adolescents. However, not all aspects of HEADSSS need to be elicited in a single interview.

B. VIRTUAL PHYSICAL EXAMINATION (Video Call)

Residents shall conduct virtual physical examination whenever possible. A virtual physical examination can be done during a video call. If only an audio call is possible, the resident may elicit more information using a script that is provided. (see below)

Remember that if the case REQUIRES a physical examination which cannot be accomplished via teleconsult or if the video exam proves inadequate, it is prudent to arrange for a face to face consultation.

Prepare the both the parent and the child/ adolescent for the virtual physical examination. Some tips to from CHOC Children's Hospital:

- Ensure patient's comfort and privacy particularly if clothing will be removed during the exam. Ask non-essential staff or family members to leave, when appropriate
- Explain that video consultation is not recorded, cannot be posted or forwarded.
- Engage and encourage cooperation from patient and parent/guardian. Make clear instructions to the parent/guardian on how to perform the exam.
- Assure the best possible video experience. Check lighting and ask parent/ guardian to adjust lights, move closer or farther from the camera, remove objects that obstruct the view, speak more loudly.
- Verbalize what you think you are seeing, allowing the patient and parent to clarify as needed.
- **Refer for face to face consultation if the video exam is not adequate to provide robust medical decision making**

1. General Survey

Residents shall describe in the general survey the physical appearance of the child, caregiver and environment (i.e. if the child / house look unkempt,

2. Measurements

Residents shall get the anthropometric measurements whenever possible.

a. Weight

- **If with equipment** to get the measurements, the resident shall guide the caregiver in getting the measurements.

- Guide the caregiver how to get weight using their available weighing scale (if weighing scale is analog: ensure the red mark is positioned at 0, remove the shoes/slippers and clothes before weighing the child, read where the red mark is positioned)
 - **If there is no available equipment**, ask and record the last measurements, when and where it was taken i.e. 13 kg, taken last March 2020 during the Sick Child Clinic Consultation at PGH.
- b. Height
- May be deferred for face to face
- c. Head Circumference
- May be deferred for face to face
 - If very necessary, the parent maybe be guided in taking this measurement

3. Vital Signs

- a. temperature- when available, ask the parent to use a digital thermometer to take the temperature
- b. pulse rate- guide the parent in taking the pulse rate for a full minute
- c. respiratory rate- count respirations for a full minute (do this early in the exam before the child becomes agitated).
- d. Utilize a pulse oximeter when available; have the BP taken when parent/guardian has equipment and are used to taking the BP

4. Virtual Physical Examination

	Observe for
General Survey	Observe surroundings: dirty? clean? organized? Is the child ill/ well-looking, well nourished, neat/ disheveled, (un) comfortable, fatigued, attentive, distracted, drowsy Observe caregiver and child interaction: any nonverbal actions/verbal statements given toward child
Head	Note the size and shape, deformities, fontanelles
Face	Observe the appearance of the face (symmetry, presence of dysmorphic features)

Eyes	<p>Check the appearance of conjunctiva and eyelid: lid droop, swelling conjunctival injection, eye discharges, icterus “allergic shiners”</p> <p>Observe the appearance of pupils (equal, round) Assess the extra-ocular movements by asking the patient to look up/ down, to right/ left</p>
Ears	<p>Observe the external appearance of ears (deformities, discharges)</p> <p>Elicit pain by tagging at the tragus (with help of the caregiver)</p> <p>Assess hearing grossly (able to hear, does not appear to hear)</p>
Nose	<p>Note the external appearance of nose (deformities, discharges), “allergic salute”, nasal crease</p> <p>Observe flaring of nostrils indicative of respiratory distress</p>
Mouth and Throat	<p>Inspect lips, mucosa and note the color and if dry/ moist</p> <p>Ask the parent to shine a light from a penlight or mobile phone to examine the mouth and throat</p> <p>Observe teeth, gums, presence of cleft palate Note stomatitis, tonsillar enlargement, exudates</p> <p>Note- Older children can be asked to say AHHHH while the camera is placed near the mouth. Inspection of the throat may be done towards the end of the examination for small children. Alternately, ask the parent to take a picture of the child’s throat to be sent to you</p>
Neck	<p>Note the external appearance of the neck: overall appearance, symmetry, evidence of thyromegaly, lymphadenopathy, jugular venous distention and pulsations</p> <p>Ask the patient to turn head to right and left side and note pain and presence of limitation of movement .</p> <p>Jugular venous distension is best observed with the child turning his side to one side</p> <p>The parent may be guided to palpate for the sternocleidomastoid muscle (as landmark) and palpate for masses anterior or posterior to the landmark.</p>

Chest	<p>Note gross deformities (e.g. pectus excavatum); observe if precordium is dynamic/ adynamic</p> <p>Inspect the the breasts (symmetry, nipple discharge)</p> <p>Costochondral tenderness with self-palpation or palpation by caregiver</p>
Respiratory	<p>Assess the pattern of breathing</p> <p>Assess the respiratory effort: intercostal retractions, use of accessory muscles, diaphragmatic movement, pursed lips breathing, speaking in full sentences or limited to shortness of breath)</p> <p>Listen for audible wheezing, stridor; presence and nature of cough frequent, occasional, wet, dry, paroxysmal</p>
Cardiovascular	<p>Inspect digits and nails (capillary refill, clubbing, cyanosis), mottling</p> <p>Ask the parent to touch hands and feet and note if these are colder than usual</p> <p>Note the presence of edema in the extremities If there's edema, ask the parent to press her thumb to the pre-tibial area to determine the presence of pitting</p> <p>Capillary Refill Time (CRT) may be determined with the assistance of the parent. Ask parent to apply moderate pressure for 5 seconds on the finger. Observe return of normal color. Document using number of seconds (e.g. 2 seconds or less, 4 seconds). Normal CRT is 2 seconds or less.</p>
Abdomen	<p>Ask the child to lie down comfortably and to flex knees</p> <p>Observe the contour, presence of distension, striae, veins and scars – ask how the patient got the scar</p> <p>Ask caregiver to palpate the abdomen by quadrants. Observe the child for signs or tenderness (including the child's facial expression).</p> <p>Ask the child to cough and ask if there is pain. Pain may also be elicited by asking the child to jump.</p> <p>Note: presence of abdominal distension, tenderness and pain on coughing or jumping indicates the need of face to face</p>

	consultation Costo-vertebral angle tenderness can be elicited with the assistance of the caregiver
Male Genitalia	Observe gross appearance, un/ circumcised penis, rashes, discharges, scrotum- erythema, swelling
Female Genitalia	Observe gross appearance, rashes, discharges, lesions
Musculoskeletal	Observe gross deformities, alignment, symmetry, tremors, muscle bulk, edema; notice clubbing, cyanosis Note joint swelling, range of motion, pain, tenderness on palpation by caregiver
Skin	Note jaundice, rashes (macules, papules, vesicles, wheals etc) petechiae, hematoma. Note the distribution and location The caregiver may be requested to send pictures of rashes because the camera of the laptop of tablet may not give sharp images.

A neurologic examination or portions thereof, may be performed virtually. There needs to be preparation prior to consult and you will need the cooperation of the patient and the care-giver. Please see the references below for more information.

	Observe
Mental Status	Orientation, mood, thought process, thought content, abnormal perceptions, insight, judgment, memory, attention
Cranial Nerves	CN1- cannot be tested CN2- assess if vision is grossly normal CN3,4,6 –pupillary size, reaction, EOMs CN5- ask to clench jaw CN7-ask to raise brows, smile/ frown, show teeth, blow cheeks CN8- assess if hearing grossly normal CN9-10- ask to swallow and say “Ahhh” CN11- ask to patient to shrug shoulders CN12- ask patient to stick out tongue and see if it’s in midline, presence of fasciculation
Motor	Assess muscle bulk, tremors, muscle strength Ask patient to hold their arms out with elbows straight, spread their fingers, and turn their hands up as if catching rain and observe for pronator drift (demonstrate position)

	<p>Ask patient to rise up from a seated position with arms folded across chest to detect proximal weakness.</p> <p>Ask patient to walk and observe gait Ask to stand on heel and to walk on tiptoes Ask to walk heel to toe</p> <p>Instruct to do Romberg's, rapid alternating movements (RAMs), finger to nose</p>
Sensory	Test with the help of the caregiver
Reflexes	Generally cannot be tested

C. Guide for Audio Calls (see Module 1 PGH OPD Telemed Guide Audio for details)

Most of the telehealth consultations in the Department of Pediatrics have utilized only audio calls- the most accessible for our patients. This guide and script was organized and collated by resident rotators and fellows of the Division of Ambulatory Pediatrics to facilitate the process. It has been modified for the past months and is still open to additional changes.

Below is a scripted guide for obtaining more information about the chief complaint. Data gathered here will still be considered subjective and documented as such.

	Questions
Kabuuang lagay	<p>Nasaan po kayo ngayon? Sino po ang inyong mga kasama ryan? Kamusta ang inyong paligid? Kamusta po ang bata ngayon? Gising? Tulog?</p>
HEENT Eyes	<p>Ano po ang kulay ng gilid ng itim na bilog sa kanyang mga mata?,</p> <p>Kapag hinila pababa ung babang bahagi ng mata, ano pong kulay nakikita ninyo? Maputla o mapula?</p> <p>Ano pa po ang inyong nakikita sa mata? Bukol? Kuliti? Muta?</p>

Nose	<p>Pakilarawan po ang kanyang ilong. Ano po ang inyong nakikita? May sipon? Pagdurugo? Mayroon po bang bukol?</p>
Mouth Teeth & Gums	<p>Pakilarawan po ang kanyang bibig. Ano po ang inyong nakikita? Mayroon po bang bingot sa labi? Mayroon po bang mga sugat, pagbitak-bitak ng labi? Pakilarawan po ang kanyang ngipin. Ano po ang inyong nakikita? Buo po ba ang kanyang mga ngipin? May mga itim po ba? Ano po ang kulay ng kanyang gilagid? Mayroon po bang bukol? Nana?</p>
Throat	<p>Pakilarawan po ang kanyang lalamunan. Ano po ang inyong nakikita? Mayroon po bang mga bukol? Pamumula? Mayroon po bang nana?</p>
Neck	<p>Pakilarawan po ang kanyang leeg. Ano po ang inyong nakikita? Mayroon po bang mga bukol? Pakikapa po ang kanyang leeg. Ano po ang inyong nakakapa? Mayroon po bang mga bukol? Kulani?</p>
Chest	<p>Pakilarawan po ang kanyang dibdib. Ano po ang inyong nakikita?</p> <p>Kamusta po ang kanyang paghinga ngayon kumpara sa nakaraang araw? Ano po ang naririnig ninyo sa kanyang paghinga? May sipol po ba?</p> <p>Sa may bandang puso po, Ano po ang inyong nakikita?</p>
Abdomen	<p>Pakilarawan po ang kanyang tiyan. Ano po ang inyong nakikita?</p> <p>Mayroon po ba kayong napapansin sa kanyang mukha o naririnig na kanyang sinasabi patungkol sa kanyang tiyan? Sa tuwing nahahawakan o napipisil ng bahagya ang tiyan?</p>
Extremities Hands & Feet	<p>Pakilarawan po ang kanyang kamay. Ano po ang inyong nakikita? Ilan po ang kanyang mga daliri?</p>

	Ano po ang itsura ng kanyang mga daliri? Ano po ang kulay ng kanyang mga kuko? Mapula? Maputla? Nangingitim? May pagmamamas po ba?
Skin	Pakikarawan po ang kanyang balat. Ano po ang inyong nakikita? Kung mayroong mga bukol, sugat o pasa, Ano po ang hugis? Ano po ang sukat? Ano po ang kulay? Nakaangat po ba o flat? Saan po nakikita? Ilan po ang ganito sa buong katawan? Mayroon po bang laman na tubig? Nana? May mga dilaw po bang nana?

Reference:

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Benziger CP, Huffman MD, Sweis RN, Stone NJ. The Telehealth Ten: A Guide for a Patient-Assisted Virtual Physical Examination. Am J Med. 2020 Jul 18:S0002-9343(20)30597-0. doi: 10.1016/j.amjmed.2020.06.015. Epub ahead of print. PMID: 32687813; PMCID: PMC7368154.

A Successful Virtual Physical Exam. https://www.aap-oc.org/wp-content/uploads/2020/04/Virtual-Physical-Exam-V2_Final.pdf

Children’s Hospital Orange County Telehealth Resources
<https://www.choc.org/telehealth-resources/>

Bates Guide to Physical Examination and History Taking 12th Ed downloadable at https://www.academia.edu/41589175/BATES_12th_Edition

Velasquez SE, Chaves-Carballo E, Nelson EL. Pediatric teleneurology: a model of epilepsy care for rural populations. Pediatr Neurol. 2016;64:32-37

Videos on Neurologic Exam:

From NeuroBytes of American Academy of Neurology:

1. <https://youtu.be/KGIFCWWZGKY>
2. <https://youtu.be/U12GQwdyvZY>

3. <https://youtu.be/m4ntpFyZlv8>

From American Headache Society

1. <https://youtu.be/m4ntpFyZlv8>
2. https://youtu.be/H6Z_SNcWz8E
3. <https://youtu.be/9GJsAld120>

ACKNOWLEDGMENT:

Dr. Ma. Emma A. Llanto (EDITOR)

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	<p>Step 1: Vital Signs -Weight, blood pressure, pulse, oxygen saturation, temperature</p>
	<p>Step 2: Skin assessment -New bruises, rash, swelling</p>
	<p>Step 3: Head, Eyes, Ears, Nose, and Throat -Assess vision, hearing, sense of smell; observe throat, swallowing</p>
	<p>Step 4: Neck -Assess pain with rotation, jugular venous distension, Corrigan's pulse</p>
	<p>Step 5: Lungs -Deeply inhale and hold; observe wheezing and tachypnea</p>
	<p>Step 6: Heart -Assess pulse; incorporate data from wearables</p>
	<p>Step 7: Abdomen -Assess if abdomen is firm, tender, or distended</p>
	<p>Step 8: Extremities -Press thumb into pre-tibial area and assess edema; perceived temperature</p>
	<p>Step 9: Neurological -Speech, gait, Romberg, stand from seated position</p>
	<p>Step 10: Social Determinants of Health -Diet, physical activity, sleep, stress, housing, transportation, safety, mood</p>

