

Telehealth Simulation: Upper Respiratory Infection (School-based Care)

**indicate telehealth focused content*

A. Cover Sheet/Overview of Case

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***Case purpose (e.g., brief description of the patient case and telehealth integration)**

The purpose of this case is to assist the learner to utilize telehealth intraprofessional care delivery in a school-based clinic setting care. The learner will demonstrate history taking, a physical exam, assessment/clinical reasoning skills to diagnose a patient, and develop a plan with an adolescent (may replace with younger child) in a school-based clinic. A handoff or collaboration can continue with another professional for the care the patient.

This template can be adapted to:

- 1) A telehealth visit using a videoconferencing platform from the school-based clinic learner to the APRN student learner without peripherals.
- 2) A telehealth visit using a videoconferencing platform from the school-based clinic learner to the APRN student learner with peripherals.

***Case Objectives (Sample objectives below. Select those that apply or create new)**

- Demonstrate an understanding of the different types of telehealth technologies and the use of telehealth as a care delivery method
- Implement telehealth etiquette, professionalism, communication, and therapeutic influence skills during a virtual patient encounter
- Demonstrate best practices and evidence-based guidelines during a telehealth visit with an appropriate physical assessment, establishment of a differential diagnosis, and management of a patient with an upper respiratory infection
- Demonstrate a focused assessment for an upper respiratory infection/HEENT exam and adaptation in technique for a virtual patient telehealth encounter
- Demonstrate how to integrate coordinated care with a telepresenter serving as the telehealth provider.

***Learner's prerequisite knowledge and skills: (Examples below based on case level)**

- Use of telehealth videoconferencing platform and telehealth peripherals
- Telehealth etiquette and professionalism skills
- Ability to assess, diagnose and manage the non-complex (stable) pediatric primary care patient
- Basic knowledge of advanced history and physical assessment, pathophysiology, pharmacology, health promotion, primary prevention, secondary screening; and guidelines for managing upper respiratory diagnoses.

***Telehealth Technology Addressed:**

Synchronous delivery using varied platforms

***Telehealth Technology Included in Case: (Select all that apply)**

Computer, iPad, iPhone, etc..

Videoconferencing using ZOOM for healthcare and icloud (alternate platforms may be used)

Telehealth cart and peripheral tools to include stethoscope and otoscope

Telehealth backpack (travel kits)

Remote patient monitoring of vital signs and SaO2

Home monitoring equipment kits

***Scenario Requirements: (i.e., SP, mannequin, moulage, props, physical exam equipment):**

- Child (or adolescent) Standardized Patient or Mannequin
- HEENT equipment (otoscope, flashlight)
- Three different setting/areas needed: Distant site for provider and school-based clinic setting for telepresenter and “home/work” site for caregiver
- Phone (to reach caregiver offsite) or can use a videoconferencing platform to speak to caregiver post-visit.

***Case Complexity Adaption:**

- Beginning student: This case can be used with beginning students learning the role of the APRN provider in telehealth care delivery. A beginning student could focus on how to initiate a visit and orient the patient who is using telehealth for the first time. Depending on the equipment available and site of origin of the visit, the focus in a simple scenario would be on each other’s roles and orientation/education of the patient. For each role, there would be a demonstration using evaluation tools and skills checklists of telehealth etiquette, telehealth professionalism, and communication.
- Intermediate/mastery student: This case can be adapted to a higher-level student using a telehealth cart and peripheral tools in a telehealth learning suite with RN, APRN-NP and patient/manikin in the primary care telehealth hub. If no telehealth cart is available, other equipment such as Home Telehealth Monitoring Equipment, Travel kit or Backpack may be used. This case can be adapted to a higher level of complexity using ZOOM or other videoconferencing connection to the patient’s home to do a HEENT history and physical exam, to diagnose and manage upper respiratory diagnoses. The student can demonstrate how to do exam with and without peripherals.
- Additionally, the scenario can increase the level of intraprofessional communication in the use of peripherals and care of the patient.
- The scenario is adaptable to the university’s resources and level of student.

B. Case Information for Learners

Case Scenario Brief

***For the pre-licensure student or embedded participant:**

You are the school nurse at a school-based clinic who has a student in your clinic who is complaining of upper respiratory/cold symptoms. Your goal is to collect a history, do a general assessment of the patient and initiate a telehealth visit with a primary care provider (if needed), assist the provider with the telehealth visit with or without peripherals and assist the provider to carry-out or explain the plan to the patient and caregiver.

For the APRN student:

You are the nurse practitioner provider who has been contacted for an appointment using the school-based clinic nurse (BSN student or embedded participant) as the telepresenter. The patient and nurse are located at a public school in town. The clinic nurse has access to a telehealth cart (or other telehealth technology) with peripheral tools, and a platform that requires WIFI and ZOOM for healthcare. The clinic nurse knows how to use the telehealth cart (other technology) and peripheral tools (if available). The parent of the student can be reached by the school-based clinic nurse via phone or other videoconferencing platform.

You will be working with the school-based clinic nurse at the distant site to determine the diagnosis of the patient, formulate a treatment plan, explain the plan to the school-based clinic nurse and speak to the parent if necessary. The goal is to communicate with the school-based clinic nurse to obtain a patient history and complete an assessment using telehealth peripherals. At the minimum there should be a focused history and physical exam around the patient's chief complaint, a management plan, and a follow up visit scheduled, if necessary. The choices for the visit are:

- *Videoconferencing with school-based nurse and patient at school and parent on the phone*
- *Videoconferencing with school-based nurse and patient at school and videoconferencing with parent*

Things the provider(s) can demonstrate are intraprofessional communication skills, telehealth etiquette skills, clinical judgement skills, implement best practices for telehealth, make a list of differential and medical diagnoses; implement a plan of care based on evidenced based guidelines; decide what type of visit for follow-up, and decide what equipment is needed for the patient's visit, educating the school-based clinic nurse, patient, and parent.

***Learner's task(s) to be completed**

- Initiate a telehealth visit
- Establish the reason for visit
- Consent or verify consent of the patient
- Secure the environment (i.e., HIPAA/Confidentiality/Security)
- Identify participants
- Communicate with the school-based clinic nurse to obtain HPI
- Perform an appropriate exam
- Communicate systems needed for a focused exam and guide school nurse (telepresenter)
- Develop next step treatment plan with school nurse (telepresenter) (e.g., medication, office visit)
- Establish plan and schedule follow-up appointment with school nurse (telepresenter)
- Initiate communication with caregiver (if patient is at a school-based clinic) to discuss plan/follow-up
- Prescribe medications and send (electronically via EMR or called in) to pharmacy of choice

Patient Name: Shannon Price

Age: School Age (15 years – 18 years of age – May have a younger child)

Gender: as self-identified by standardized patient or given to manikin

Setting: School-based clinic and provider site

History: Patient experiencing respiratory symptoms

CC: “My nose is runny and stuffy and today my left ear started popping when I sniffle.”

HPI/PMH/Social HX/FMH: Will be provided to you by standardized patient or caregiver based upon your communication with them

Physical Exam: Some elements will be provided by the school-based clinic nurse based upon your communication with them and you will need to direct the clinic nurse on what you would like them to do with the peripherals, if available.

Vital signs: Will be provided to you by the school-based clinic nurse based upon your communication with them

Lab results: unavailable at this time

C. Content for Standardized Patients

Case summary/presenting information: (include age, gender, summary statement, background info related to health care issue)

Standardized patient or a manikin and caregiver can be played by a Standardized Embedded Participant (SEP).

SP/manikin is an adolescent (or child) with gender as self-described by the SP or manikin used. The SP will present to the school nurse (pre-licensure student or standardized embedded participant) in the school health clinic with the chief complaint of a stuffy or runny nose for the past 2 days.

For the purposes of this information sheet, the case will be a child with acute upper respiratory symptoms, but can be adjusted to COVID, otitis media or otitis externa. Adjust the PMH and HPI accordingly.

- *Visit format choices
 - ZOOM or other videoconferencing platform
 - ZOOM or other videoconferencing and choice of equipment (telehealth cart\peripheral tools, Tytocare, Backpack, or travel kit) (Adapt Case accordingly)
- Opening Statement:
 - “My nose has been really runny stuffy for the past 2 days and it is not getting better. Then today my left ear started popping when I breathe in deep or sniffle. My mom/dad/caregiver told me if I was feeling bad at school today to go to the clinic.”
- General Appearance (e.g., make up, how hair is worn):
 - Patient: tired, congested, friendly
- Dress (e.g., patient nightgown, socks okay):
 - Typical for SP’s age or manikin being used—may vary with what is available for the simulation.
 - SEP school nurse—typical for role
- Presentation and resulting behaviors (e.g., body language, non-verbal/verbal characteristics):
 - Steady eye contact, relaxed body posture, speaks well and is articulate
- Mood/Emotions:
 - Happy but looks tired and irritated with the nasal and new ear symptoms
- Dealing with open-ended questions and guidelines for disclosure:
 - SPs will answer naturally to open ended questions.
 - If information appears in checklist, SPs are trained to answer only if asked. In addition, if there is information that should not be offered unless asked, indicate “only if asked” in the case

History of Present Illness (Please answer these questions, only if asked.)

- Onset: Runny, stuffy nose started 2 days ago; ear popping started
- Location: Nose
- Duration: 2 days
- Characteristics/quality: Clear to cloudy runny nose with decreased sleep due to stuffiness at night
- Intensity: Moderate during the day, but worsens in the evening
- Alleviating factors (what makes it better): Hot shower, eucalyptus oil in diffuser and blowing nose
- Aggravating factors (what makes it feel worse): Nothing really
- Precipitating factors (what seems to bring it on): It seems to be all the time.
- Radiation: NA
- Treatments: Tried ibuprofen, nasal saline, vapo rub and eucalyptus oil in the diffuser
- Significance (impact on patient’s life): It’s irritating. I can’t breathe through my nose. I have to blow it all the time. The popping in my ear is starting to hurt.
- Associated/other symptoms: Complaining of decreased hearing in left ear.
- Pertinent negatives (if on SP checklist): You have not been around anyone who is ill.

Review of Systems (e.g., pertinent positives and negatives)

- General: Denies fever and shortness of breath
- HEENT: Denies, pharyngitis, sore throat, discharge from ears or eyes, pain/swelling in neck
- Cardiac: Denies chest pain, cyanosis, palpitations, swelling in feet
- Pulmonary: Denies shortness of breath at rest or with walking upstairs; Denies wheezing or coughing; Denies sputum, Last TB test was 2 years ago and was negative
- Abdomen: Denies diarrhea/vomiting/blood or tarry stool
- Genitourinary: Denies frequency/urgency/painful urination
- Musculoskeletal: Denies any muscle weakness or pain
- Neuro: Denies headache, weakness, syncope, vertigo

Past Medical History:

- Illnesses/injuries: None
- Hospitalizations: None
- Surgical history: None
- Screening/prevention: No screening tests in 10 yrs. Had influenza vaccination in 2019 at school clinic
- Immunizations: Up-to-date on all vaccinations for age
- Current Medications (prescription, over the counter, supplements): multivitamin with dinner, ibuprofen, saline nasal spray
- Allergies (e.g. environmental, food, medication and reaction): No known drug, food or latex allergies. Occasional seasonal allergies.
- Gynecologic: Deferred
- Psychiatric: None

Family History: Family tree (e.g., health status, age, cause of death)

- Mother and father: both alive and well with no chronic issues
- Brother: alive and well with no chronic issues

Social History:

- On Dad's health insurance through his job
- Substance use (past and present): None
- Drug use (recreational): None
- Tobacco use: None
- Alcohol use: None
- Home situation/environment: Lives with both parents and brother
- Support systems: parents, friends, church
- Occupation: Student
- Relationship status: None
- Leisure activities: Swimming, playing clarinet in the jazz band and playing video games
- Diet: Nothing special eats 3 meals per day
- Exercise: Swims every day and has weight-lifting class at school

Physical Exam Findings:

Vital Signs: Use these or will be done in exam by the telepresenter (BSN student or SEP)

- (T98.6 P72 R20) (SaO2 98%) (BP 115/60)
- Exam done school-based clinic nurse (BSN student or embedded participant) are what will be documented. The exam should be done on a minimum of 3 systems chosen by learner.

***General:** Through the camera, there is a healthy appearing patient who has good color. The patient is relaxed and talkative with good eye contact. Answers questions accurately in normal voice, has good recall, and has a comfortable demeanor.

Head: Normocephalic with equal distribution of hair.

***Eyes:** On inspection pupils are equal, round, and with penlight applied by the patient or provider at telehealth hub, the pupils are reactive to light and accommodation (patient or provider to shine penlight in eyes). No nystagmus. Sclera is white, conjunctiva light pink. EOMs intact. Able to see pupils react as child looks into the computer camera and caregiver shines the light as instructed in each eye.

***Nose:** On inspection there is no nasal flaring, the nose is normal color and blends with rest of skin tone; slight clear/cloudy drainage, No swelling or bumps or bruising; with head tilted back and use of light to see into the nares and nose pointed to telehealth camera – nares are patent with turbinates that are pink with boggy nasal mucosa, no redness, swelling or drainage. On palpation by telepresenter, there is no pain.

***Ears:** On inspection pinna appear smooth and set equal to canthus of eye, no visible drainage or ear wax present, with palpation there are no lumps or pain; no pain to palpation of tragus. The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart otoscope to send a picture of inner ear to APRN provider. The right tympanic membranes is pearly grey with good light reflex and landmarks at appropriate locations, no distortions or bulging present. The left tympanic membranes is pink/red with unclear landmarks and slight bulging present.

***Mouth/Throat:** The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart otoscope to send a picture of inner ear to APRN provider or describe: On inspection teeth are intact and no cavities; tongue is midline; posterior pharynx is pink with clear exudate; tonsils +2 bilaterally without exudate.

Neck: On inspection no swelling in neck. No supraclavicular retractions. On palpation no tenderness in neck in location of occipital, posterior, anterior and lateral lymph nodes. On palpation, no tenderness or lumps in thyroid region of neck. Able to swallow without difficulty. No hoarseness with talking.

***Cardiac:** On inspection of anterior thorax there are no visible pulsations. The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart stethoscope to transmit sounds to APRN provider. There is a regular rate and rhythm pulsation. On auscultation with digital stethoscope there is clear and distinct S1 and S2 and no murmurs, skips or gallops, no S3 or S4 auscultated.

***Pulmonary:** The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart stethoscope to transmit sounds to APRN provider. On inspection there is a respiratory rate of 20, rhythm and depth of respirations is normal and full. The skin tone is normal color for rest of the body and no bruising or lesions. On palpation there are no areas of pain or tenderness or lumps. On auscultation the lungs are clear with vesicular sounds, with no wheezing, rales, or rhonchi.

***Abdomen:** On inspection there are no visible pulsations. On palpation (by patient/caregiver or telehealth hub RN) there is no pain or tenderness in any of the four quadrants. The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart stethoscope to transmit sounds to APRN provider. On auscultation there are normoactive bowel sounds in all four quadrants.

Peripheral vascular/extremities: On inspection there is normal color and no cyanosis; no swelling or edema; on palpation the patient/caregiver or RN palpates warm toes and fingers; on palpation there are strong pulses (2+) in the carotid, brachial, and radial areas on both upper extremities which are equal; on palpation. The school-based clinic nurse (BSN student or embedded participant) strongly felt (2+) pulses in the femoral, popliteal, and tibial pulses which are equal on both sides. On palpation there is no pitting edema with applied pressure. The school-based clinic nurse (BSN student or embedded participant) can use the telehealth cart stethoscope to transmit sounds to APRN provider. On auscultation, there are no bruits in carotid and abdominal and femoral arteries.

Diagnoses should include:

- Upper respiratory infection
- Left Otitis Media

Plan: As relevant for case/diagnosis

Adaptations of Scenario: can be adapted for the following diagnoses: (adjust History and Physical Findings accordingly)

- Strep Throat
- COVID
- Allergic or Bacterial Sinusitis
- Other respiratory diagnoses

D. Post-Encounter Activities/Evaluation with focus on Telehealth*

1. Tools adapted for the evaluation of the student:

- ***Telehealth Simulation Checklist***
 - Faculty Evaluation of Student
 - Standardized Patient Evaluation of Student
 - Student Self-Evaluation
- Faculty Evaluation of Oral Report to Preceptor of Student
- Evaluation of clinical SOAP note including documentation of billing and coding data using a written note rubric
- Student Self-evaluation and Reflection for Improvement incorporating the following questions:
 - Reflect on and describe your comfort level with the learning activities in this telehealth activity and the overall telehealth simulation experience.
 - Describe how your participation during the telehealth simulation experience could potentially affect your future practice as a nurse practitioner.
 - Describe strategies you used to establish your provider relationship with the patient and family member during this telehealth experience.
 - Discuss how these strategies are similar or different to those you have used to establish your provider relationship with the patient during face-to-face clinical encounters.

2. Two-faculty debriefing in groups of students (6 students is ideal).

- One faculty member could be a simulation expert and address content addressing the actual simulation experience using best practices described in International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: SimulationSM Debriefing (INACSL Standards Committee, 2016).
- Second faculty member with experience in pediatrics may be useful in facilitating discussion related to the atypical presentation of respiratory illnesses in children and considerations related to clinical management of children with telehealth.

3. Discussion questions/topics for Debrief:

- Comfort with equipment
- Comparisons, and contrasts between live and telehealth visits with regard to establishing rapport, gathering a history, performing a physical examination, diagnostic work-up, establishment a diagnosis, and probable treatment plan
- Relationship building in the virtual environment, positive and negative experiences.
- Atypical presentation of illness in a child - considerations of history taking and physical examination, inclusion of family caregiver, determining diagnosis/alternative diagnoses, considerations in clinical management, acuity of case, and referral.
- Role of simulation staff in creating separate virtual rooms to facilitate small group prebrief and debrief activities and rooms for the actual encounters.