

## OHSU Family Medicine Clinical Experience OSCE – Telemedicine: Knee Pain

### Case Title: Knee Pain – Telemedicine

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Time Allotted for Case: 10-13 minutes (+5 minutes of feedback)

Scenario: Patient with knee pain who thinks he/she should get an MRI done.

### Objectives:

- Utilize telemedicine video technology to clinically assess a patient
- Obtain a history sufficient to devise an accurate diagnosis.
- Avoid ordering a knee MRI for a patient with anterior knee pain without mechanical symptoms or effusion unless the patient has not improved following completion of an appropriate functional rehabilitation program.

**SOM Assessed Competencies:** Act in a consultative role, including participation in the provision of clinical care remotely via telemedicine (ICS8)

**Room set up:** Students will enter a room set up utilizing video conferencing. The actor will be in a separate location. If students and faculty are remote (not on site), they will also connect to the scenario utilizing the videoconferencing software.

### Props for the room:

- Computer, tablet, or smart phone with video connectivity for actor
- Strong Wi-Fi reception for all remote participants, landline connectivity for on-site
- Videoconferencing and teleconferencing capability (land line voice connectivity and monitor for video)
- Software to simulate Video conference (Zoom for example)
- Student scenario

Case setting	Family Medicine outpatient office
Patient name	AJ Johnson
Age of actor	Able to play someone 42 years old who has a normal knee range of motion (if the SP has past surgery scar and the student asks they can say the scar is from a childhood cut)
Gender	Per SP , anywhere on spectrum
Occupation	Ranching

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Actor Script**

**CHARACTER:** AJ Johnson, 42

**DRESS:** Casual, shorts/skirt/dress or loose fitting pants in case student asks to look at your knee

**SETTING:** At your home, connecting to your doctor via telemedicine from your home device to your clinic. Note – this scenario may use Zoom for videoconferencing with the student having a document with the attachments, OR it may utilize the Epic telemedicine software. The SP will utilize the same connection either way.

**Affect:** You are worried you have an ACL tear so you set up this telemedicine consult to try to get an MRI in Bend when you go there next week.

You live in Christmas Valley, OR and your family doctor is 2 hours away in Burns. You have excellent satellite internet and are thankful for this opportunity and have used this software before.

Your demeanor is straightforward and to the point. You are convinced you need an MRI and just need this physician to put in the order.

**OPENING LINE:** “I think I have an ACL tear on my left side and need an MRI.”

**CHIEF COMPLAINT:** Knee pain

**Background of Chief Complaint:**

Last weekend, you were watching a game where the player was injured and got an ACL tear taking them out of the season. You are anxious you have that because your left knee has hurt on and off for years. You wear work boots to be safe, don't remember any injuries yourself, and have had pain on and off for years.

You are not sure what caused the pain but a ranch hand passed away a few years ago and you've picked up the extra work since then. You've read that many people function with a minor ACL tear and worry it will get worse if you don't get an MRI to get it diagnosed. You can't miss work and are not close to medical care so want this ordered for when you got to Bend next week to visit your family because you called your insurance and they won't pay for it if the doctor doesn't order the MRI.

You have sent your PCP clinic a picture of your knee thru the software. If the student asks to see your knee more clearly, you can direct the camera to your knee.

**Symptoms:**

- You stay healthy and moving because you own the ranch
- You cannot be out of commission for a long time because you have a lot of work with the cattle ranch
- The pain is helped by 2 ibuprofen every 8 hours for the past 2 days, ice and rest
- If asked: you had an xray in an urgent care 4 months ago which was normal
- No hip or ankle pain
- No fever, eye pain, or genital pain/discharge
- No back pain other than from working hard; No headache, neck pain or other joint pain; No cough or breathing issues; No gland swelling, bowel or bladder issues; No changes in weight, appetite, or mood.

IF the student asks:

- if there is knee locking or giving way or a feeling of being unstable - no
- if there is knee swelling - no
- if there is heat or redness - no
- if there was injury – you do not remember an injury, you may have tweaked it around the ranch years ago

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- what makes it worse – After sitting for a long time - like driving to Bend – when you climb out of the car it will hurt directly over the knee cap.
- What time of day it is worse- no particular time mostly with use. If they ask if it is worse when you first wake up – you don't think so.
- ONLY if the student agrees to order an MRI, you will thank them.
- If the student does not agree that an MRI is needed AND does not explain clearly why AND what the next steps to getting better are. You will be disappointed “it would ease my mind. I really need to make sure I can keep the ranch running, doc.” You will be reassured if they explain why clearly and completely. If they use cost as an excuse – tell them your insurance will cover it. If they say we do not need it, exercises will help, we are confident it is not your ACL, or a similar reassuring explanation, you will be ok with the plan.

#### PAST MEDICAL HISTORY:

You see your doctor yearly for physicals and do not have any medical problems.

**MEDS:** None

**ALLERGIES:** None that you know of

#### SOCIAL HISTORY:

**Lives with:** spouse Frankie and children

**Children:** Three children: Molly a 5yo, June a 3 yo and Cole a 1yo

**Work:** You own the small cattle ranch and sometimes pay friends and others to work

**Exercise:** Working on the farm

**Hobbies:** Caring for the ranch, care for your adoptive family near by

**Tobacco Use:** None

**Alcohol Use:** 5 beers per week, never more than 2 per night

**Drug Use:** None

**Sexual History:** Monogamous with partner, use condoms for birth control if applicable

#### FAMILY HISTORY:

**Father, Mother, Siblings:** You are adopted and do not know your history

#### IMPORTANT NOTES:

- At the beginning of the encounter, place your face slightly off camera (tilt the screen upward so that just your forehead and top of your head is captured on the camera).
- If the student does not ask you to adjust your camera after the first minute of the encounter, ask the student if he/she can see you ok. If they still don't ask you to adjust your camera, do it yourself and give them feedback at the end of the encounter that they should help make sure the patient is fully visible when doing a telemedicine encounter. If they ask you to move camera- you will adjust it so your full face is on the screen.
- You are in a bit of a hurry since you are taking this time off from the ranch. You just want to get the order so you can get back to your work.
- If the student says you do not need an MRI you will grow mildly agitated and insist you do. The student will need to do a good job of convincing you why you don't before you agree to not pursue the MRI. (see also the section on responses to Checklist questions as well)
  - You should remind the student that you run a small ranch and you can't afford to be off your feet, so you are really worried about this.
- IF the student asks you to give a summary of what you understand was said – you will do your best to explain what they told you in a short phrase.

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- If the student uses medical jargon, give them feedback at the end of the scenario on this.
- If they order an MRI, you will ask “Do you know how much it costs? And are there any risks to doing it?”
  - If they order an x-ray instead of an MRI, you will ask if it is really necessary. Do you know how much it costs?
  - If they recommend you do not need an X-ray or MRI, then ask: What happens if I don’t do anything?
- If the student advises you to treat this by doing exercises without offering further explanation, you say “I am not sure I can fit that into my busy day”. If the student explains why the exercises help or how they can improve the pain, then you will agree. If the student does NOT give you specific instruction on exactly how to do the exercises or a resource you will not ask for resources. (Since this is a checklist item, don’t ask for it). If the student offers patient a resource for home exercise or a referral for physical therapy – You will agree.

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Telemed Room Setup:

Speakerphone found in cupboard. Sitting on rolling table, closet to computer cart.



Cart: Pull from storage room in the hallway.

Stool

Rolling Cart

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**THESE NEXT THREE REFERENCE SHEETS (knee photos) SHOULD BE UPLOADED TO THE COMPUTER FOR THE STUDENT, either in a word document or through the Epic Train Telemedicine software.**

**The student does NOT get the following knee photos outside the door.**

THE PICTURE BELOW OR THE ONE ON THE FOLLOWING PAGE SHOULD BE LOADED INTO THE MEETING ROOM FOR THE STUDENT TO DOWNLOAD.



## Student Scenario

You are doing a telemedicine consult. Your clinic implemented telemedicine to better serve patients without consistent transportation as well to decrease non-urgent emergency and urgent care visits.

You will be caring for AJ Johnson, a 42 yo connecting via telemedicine. You are in Burns filling in for AJ's Family Physician, and have not met this patient before. AJ lives in Christmas Valley, Oregon which is 2 hours from the Burns clinic and not closer to other medical care. AJ asked for an MRI referral for their left knee and this visit was set up to address that.

Your task at this station is to take a pertinent history of the patient's concern and recommend management for the issue they bring up. You do not have to do an exam, but have files available.

### Patient information

Patient Name: AJ Johnson

Med. Rec. No.: 3425

**Chief complaint:** This is a 42 year old with complaint of knee pain

**PMH:** None, normal physical exams every 1-2 years. No medicines, no allergies.

**Habits:** 5 beers/week. Non-smoker, no chew, no drug use.

**Family history:** Adopted

**Social History:** Runs a cattle ranch



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Observer Checklist**

Student: \_\_\_\_\_

Date: \_\_\_\_\_

Place a check in front of each task that the student accomplished correctly. Do not place a check for any tasks that were forgotten, done partially or incorrectly. If "and" is used for a task, the student must complete all tasks. If "or" is used for a task, the student must complete or address at least one of the tasks. Students will have 2 minutes to "wrap-up" the interaction, discuss follow-up, and/or provide closure without prompting.

Interpersonal and Communication Skills, Includes the Four Habits. *The student:*

- \_\_\_\_\_ 1. Builds the relationship (not rushed, introduction, eye contact, attention, empathy, asks how to address)
- \_\_\_\_\_ 2. Establishes the agenda (elicits concerns, agrees upon agenda)
- \_\_\_\_\_ 3. Facilitates understanding (speaks clearly, avoids medical jargon, high priority information)
- \_\_\_\_\_ 4. Summarize and confirm understanding (summarizes plan, elicits questions, uses teach back)
- \_\_\_\_\_ 5. Showed listening body language (leaning forward, looking at patient)
- \_\_\_\_\_ 6. Used empathetic techniques (repeat feelings, legitimize concerns)
- \_\_\_\_\_ 7. Appropriately admitted uncertainty, and, if applicable, offered to get more information for patient
- \_\_\_\_\_ 8. Voices understanding of patient's context (cost, distance, can't miss work)

Medical knowledge. *The student:*

- \_\_\_\_\_ 9. Asks if there is knee locking or giving way or a feeling of being unstable
- \_\_\_\_\_ 10. Asks if there is knee swelling
- \_\_\_\_\_ 11. Asks if there is heat or redness
- \_\_\_\_\_ 12. Asks if there was trauma or injury
- \_\_\_\_\_ 13. Asks patellofemoral questions: Asks what makes it worse (hills, rising from crouching)
- \_\_\_\_\_ 14. Asks osteoarthritis questions: Asks what time of day it is worse
- \_\_\_\_\_ 15. Advises the patient that the next best step includes knee exercises.
- \_\_\_\_\_ 16. Offers patient a resource for home exercise or a referral for physical therapy
- \_\_\_\_\_ 17. Avoids ordering an MRI for anterior knee pain without worrisome symptoms
- \_\_\_\_\_ 18. Provides a clear accurate explanation of why an MRI is not recommended
- \_\_\_\_\_ 19. Avoids unnecessary duplication of testing: avoids ordering a plain film x-ray.

Use of Technology: *The student*

- \_\_\_\_\_ 20. Asked the patient if he could see and hear with the technology (before asked by the patient).
- \_\_\_\_\_ 21. Makes any necessary adjustments for technologic issues (coaches patient to move camera).
- \_\_\_\_\_ 22. Accessed photo of knee
- \_\_\_\_\_ 23. Verbalized what he/she was doing when not focused on the patient (e.g., while looking at photo).
- \_\_\_\_\_ 24. Remained patient-centered despite distractions (Keeps the focus of the visit on the patient rather than the technology)

**Comments for the student:**



**Follow-up:** Would any further learning activities be helpful to this student? Yes/No

**Specific skills to address:**

**Evaluator Name:** \_\_\_\_\_



**EDUCATIONAL NOTES:**

Choosing wisely has gathered recommendations on common medical problems from all the different specialists. One such recommendation comes from the Sports Medicine physician organization about knee pain:

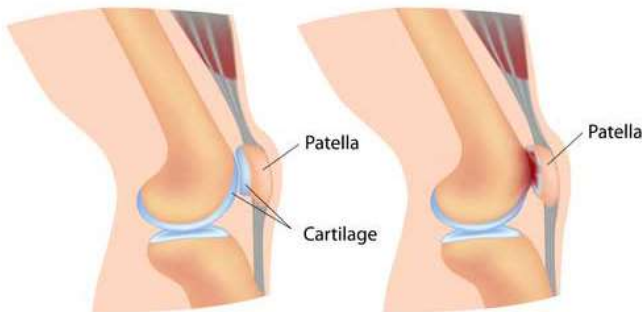
**American Medical Society for Sports Medicine- Released April 5, 2014**

**Avoid ordering a knee MRI for a patient with anterior knee pain without mechanical symptoms or effusion unless the patient has not improved following completion of an appropriate functional rehabilitation program.**

The most common cause of anterior knee pain is patellofemoral pain syndrome. Magnetic resonance imaging (MRI) is rarely helpful in managing this syndrome. Treatment should focus on a guided exercise program to correct lumbopelvic and lower limb strength and flexibility imbalances. If pain persists, if there is recurrent swelling or if mechanical symptoms such as locking and painful clicking are present, and radiographs are non-diagnostic, an MRI may be useful.

In lay terms, the sports doctors feel that that an MRI is not needed unless there is swelling that happens over and over (an effusion) or there is knee instability or locking, then the best way to treat this is with exercises that treat muscle weakness and flexibility issues. If the pain does not go away after exercises or if there are worsening symptoms and plain x-rays do not help, then and only then an MRI might (not even then is it sure) be helpful. The following explains why this is true.

Most anterior knee pain (pain over the knee bone in front) in those younger than 50 is from a problem called patella-femoral pain syndrome. This occurs when the knee cap rubs on the bone-grooves of the lower femur where it sits. This type of pain is common and is treated using exercises which work to balance the 4 muscles of the thigh (the quadriceps muscles) and the hamstrings to pull the knee cap into the center of the groove. Plain x-ray can be done but are not absolutely needed. An MRI is not helpful and is only considered necessary if the knee pain is worsening, if the knee is unstable/giving way, or if there was a severe injury that caused the pain,



Poor tracking or excessive compression of the knee cap against the femur can damage the cartilage on the undersurface of the patella and lead to anterior knee pain.

**Patient information regarding this issue (from the American Academy of Family Physicians)**

What is patellofemoral pain?

Patellofemoral pain is a common knee problem. If you have this condition, you feel pain under and around your kneecap. The pain can get worse when you're active or when you sit for a long time. You can have the pain in only one knee, or you can have pain in both knees.

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The exact cause of patellofemoral pain isn't known. It probably has something to do with the way your kneecap (called the “patella”) moves on the groove of your thigh bone (called the “femur”).

### What can I do to help my knees get better and hurt less?

Take a break from physical activity that causes a lot of pounding on your legs, like running. Low impact exercise is better while the knee is healing (swimming) or another low-impact activity. You may want to try working out on nonimpact elliptical trainers, which are popular at gyms. Because these machines support your body weight, they put less stress on your knees. As your knees feel better, you can slowly go back to your normal sports. But do this slowly, and increase the amount of time you do the sports activity by only about 20% a week.

Exercises can be done to improve the recovery. Each exercise should take only a few minutes. Doing them twice a day is a good start. The most important ones are usually the first two. These two exercises make your front thigh muscles (called “quads”) stronger. This is important because your quad muscles control the movement of your kneecap. The two exercises that help the most: 1. Quadriceps strengthening: isometrics. Sit semi-reclined on the floor with your leg that is painful straight and the other leg bent. Hold your painful leg very straight (contract the muscles) for 10 to 20 seconds and then relax. Do the exercise 5 to 10 times. 2. Quadriceps strengthening: straight leg lift. Raise your leg several inches up off the ground with it straight and hold it up for 5 to 10 seconds. Then lower your leg to the floor slowly over a few seconds. Do the exercise 5 to 10 times.

Footwear can also contribute to knee pain. If the foot rolls too easily or arches are high, this can set the knee at an angle with the remaining leg and cause the knee cap to rub in the groove as it tries to “bend over the angle”. Proper walking or running shoes can help knee pain. Even a simple arch support insert from a shoe store can be helpful.

Ice your knees for 10 to 20 minutes after activity. This can ease the pain and speed up healing. To keep your hands free, use an elastic wrap to hold the ice pack in place. A medicine like ibuprofen (brand names: Advil, Motrin and others) may also help, but talk to your doctor before you take this medicine.

### Be patient!

Keep exercising to get better. Patellofemoral pain can be hard to treat, and your knees won't get better overnight. Some people are lucky and get better quickly. But it might take six weeks or even longer for your knee to get better. You'll be less likely to get this pain again if you stay in good shape, but don't make sudden changes in your workouts.