Practical Tips for Telerheumatology clinics

1. Top Tips to Prepare Providers

Be aware that the first telemedicine visit can be disorienting for families and clinicians alike:

- Especially for families you know well and are used to seeing clinic the visit may feel very different when you find yourself chatting with them in their living room.
- For new visits, it can be harder to establish initial connection and rapport over the screen.
- Without the usual boundaries of the hospital and clinic setting televisits can also feel disjointed or overly informal.

Technology aspects and being prepared

- Take time to familiarise yourself with the telehealth platform and its functions.
- Ensure that you have remote access to the patient record as appropriate
- Consider having two screens (phone, laptop/computer, tablet) to allow you to maintain visual eye contact and also document your visit or reference chart information at the same time.
- Troubleshoot technical issues before your first visit (ensure the app is downloaded and functioning). Check sound and webcam if possible before visit. Can try calling a friend using another app like Messenger or Face Time.
- Ensure all your devices are charged and have the chargers handy in case your battery drains.
- Close other apps/programs prior to visit to improve speed/connectivity.

Platform specific issues:

- Some platforms enable you to take stills and include them in the patients record.
- Consider using a virtual background with your hospital logo or design. Web-around backgrounds can be attached to your chair as well.
- Some platforms allow 'invite' functions to enable multidisciplinary / teaching clinics or having other members of the care team or trainees be present.
- Learn the different functions such as locking the visit (to ensure privacy), 'Waiting room' features: admitting patients to the visit; placing patients back in the waiting room.
- Many visual platforms offer a 'virtual whiteboard' function which can be helpful to illustrate points to the family.
- Interpreters: Ability to invite interpreters for different languages

Camera logistics:

- Practice logistics of camera movement to get the best views of each part of the body: Instruct the family to hold phone overhead to visualize certain joints (like hands and knees, especially); Have the parent hold the tablet or phone so that you can see the entire child as they walk, etc.
- If the family has a device with two way viewing you can switch back and forth between views during visit (normal view vs 'selfie'/front camera view).
- Sometimes you can review the medical record with family by switching views from your second device.
- Be prepared for issues to arise. Have a phone number for the family in case the video doesn't function so that you can at least have a telephone check-in.

Before you begin your session, get your workspace set up:

- Preview yourself on the video platform.
- Do you have adequate lighting? Are there distracting objects in your background?
- Have bright toys around to stimulate and maintain interest of the younger children over the course of the visit.
- If you are working from home or outside a professional setting many platforms will allow you to use a background editor where you can substitute a blank blue ground or a high quality photo of your clinic or other hospital sponsored image.
- Dress professionally and be prepared for an on time start.

Developed in collaboration between the PMM[1] team Newcastle University UK, Seattle Children's Hospital[2] (US), University of Michigan CS Mott Children's Hospital[3] (US), Grand Rapids, Michigan[4] (US).
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Take a minute to think about your ergonomics.

- Unlike in person clinic visits which lend themselves to movement breaks, a telemedicine clinic involves uninterrupted stretches of screen time.
- Some preparation ahead of time for height of your monitor and position of your keyboard can go a long way to avoiding eye neck and hand strain.
- Optimal ergonomics: optimizing the height of your monitor just above your gaze and position of your keyboard can go a long way to avoiding eye, neck and hand strain from long uninterrupted stretches of screen time.

Virtual Exam Techniques (see section 4 also).

- Practice the mechanics of directing the patient/family through the exam to allow yourself to focus on observation during the visit
- With younger children play 'Simon Says' or 'Animal Poses' to help with engagement and participation.
- Ask families to utilize a tape measure to if you need patient height or to measure jaw excursion or muscle atrophy.
- Use an at-home scale to measure patient's current weight
- Parents can count heart rate and or respirations over one minute, or can tap out a patient's heart beat for the examiner to hear.
- Smartwatch and smartphone data can be reviewed to determine a patient's activity level, such as number of steps in a day, and heart rate data.

2. Top Tips to Prepare Patient/Families

- Send the weblink and instructions to the family beforehand. If possible, include pictures of the V-pGALS or CMAS manoeuvres for the examination portion of the visit in the pre-visit information.
- Note that children don't have to be present/participate in the history portion of the visit.
- Request the family to identify or prepare a visit space: ideally with good internet bandwidth, good lighting and adequate room for the child can walk around (at least 5 feet in one direction) and also sit on the floor.
- Have family be ready and prepared to 'log-in' 10 minutes before visit start time.
- Have child dress for the visit in a t-shirt, preferably sleeveless, and shorts (no socks or shoes).
- If feasible, have a chair available for patient to sit on and have a flat surface (sofa, bed or table) close by where the child can lay down to demonstrate knee and hip range of motion.
- Have family bring their child's medications to the telehealth visit to review.
- Have family email in photographs of rashes or areas of concern ahead of the visit: resolution and focus are often better through still pictures than on most consumer video screens
- Have someone else present/available for at least part of the visit (even if patient>18 years old) to hold the device during examination.

3. Top Tips to Prepare Staff

- Consider the role of the multidisciplinary team and admin support in e-visits.
- Clear delineation of tasks and carving out specific roles and responsibilities. Good communication allows seamless care with despite staff members being in different locations. Key components include:
    - Calling families ahead of the scheduled time - 'getting ready for the visit'.
    - Update allergies and reconcile medication lists.
    - Staff can request families (particularly new visits) have identification ready.
    - Staff can administer pre-visit screening tools (CHAQ, etc) and chart ahead of the visit
    - 'After visit' summaries (AVS) being available before each clinic and based off the last clinic visit for established patients.
- These AVS are then updated following the visits, including patient information and tasks or next steps for the MDT or admin staff such as printing and mailing educational handouts for the families or obtaining prior records, laboratory studies or images.
- After the visit, additional patient education such as injection teaching can be done virtually at a suitable time
- Staff can develop a reliable method to ensure AVS is delivered to family (mail, email, MyChart or patient portal).

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- If you normally have staff help you with visit wrap up or teaching, this may require a shift in workflow.
- After the visit, establishing a reliable method for follow up with staff is critical.
    - Consider a virtual 'check in' to review the clinic follow up or other ways to involve clinical support staff who normally would have been present during the visit.
    - Especially as telemedicine visits may be skewered towards families further away from your physical facility, ensuring a way to send laboratory tests and results, imaging requests and results, and after visit summaries to families is required.
    - It is important to document the contents of the visit (AVS) and the plan for the visit in a format that can either be sent to the family and family physician via patient portal or email or through traditional mail. Often this will documentation can also form the basis of your visit note / AVS.

4. Suggested Physical Examination routine

- This is likely to be different from your usual practice so is worth thinking about in advance.
- You will likely need to incorporate elements of a general examination as well as V-pGALS and potentially other manoeuvres such as CMAS. A suggested approach is below and incorporates elements of the general examination and musculoskeletal examination.
- The order is which you do things will be determined by the clinical scenario, room layout, the child and parent situation at home. Furthermore this will be affected if you have a health care professional (HCP) available as an observer as they can perform some of the examination (*in italics*).
- The Robot below refers to the position of the camera(s).

'Robot' at Foot of Bed with Straight on View

Stethoscope: heart and lung examination.

Zoom in camera for:

- Eyes: Look for conjunctivitis, pallor, jaundice.
- Mouth: check especially for oral ulcers. Can use exam camera if needed.
- Neck: palpate for lymphadenopathy.
- Skin: if rashes present. Can use exam camera if needed.

Joint Examination Upper:

- Neck: range of movement.
- Jaw: *palpation of TMJ with patient opening and closing mouth noting any misalign*ment.

Zoom out camera

- Shoulders:
    - Active Range of Motion of Shoulders
    - *Passive abduction, internal and external rotation of shoulders*
- Elbows:
    - *Palpate for effusion*, extension and flexion
    - May need to move patient for lateral view of elbow
- Wrists and Hands:
    - Zoom in Camera and place patient's hands on solid background so physician can visually inspect for any joint swelling
    - Zoom out Camera and show patient how to make a "monkey paw" (flexion of fingers) and prayer sign (hands in prayer position with wrists extended)
    - Flex and extend wrists
        - May need to move patient for lateral view of the wrists
    - Based on concern for finger arthritis, may do the following:
        - Palpation of metacarpal phalangeal joints (MCPs) and proximal interphalangeal joints (PIPs).
        - Flexion and extension of MCP joints and flexion of PIP joints
    - Spine: palpation down back and over SI joints (depending on patient)

Abdominal Exam

Joint Examination Lower:

- Knees:
    - *Zoom in Camera* for Visual inspection of knees with patient lying down with knees extended
    - *Zoom out Camera*. Palpate for effusion of knee, flex knee to buttocks, fully extend knee
- Hips:
    - Start with log roll with knee extended
    - Internal and external rotation with knee in flexed position
- Ankles:
    - *Have patient flip over to prone position with feet hanging off of bed* (Note: can recheck hip ROM in this position if needed)
    - Inspect for ankle and Achilles swelling

Patient flip over to supine position and either have patient lie diagonally across bed or put robot at angle

- Dorsiflexion and plantar flexion of tibiotalar joint, eversion and inversion of subtalar joint
- Toes: inspect for swelling, flexion of toes and PIP joint. If particular concern for arthritis can individually palpate metatarsal phalangeal joints (MTPs) and PIPs

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