Radiology
Referral Guidelines

Kootenay Boundary Regional Hospital
Phone: (250) 364-3416
Fax: (250) 364-3435

Please refer to these guidelines prior to patient referral

REQUISITIONS — See **Pathways** KBRH Medical Imaging & Nuclear Medicine for forms

Clinical details to include:

- ✓ side and site of symptoms
- ✓ clinical findings and test results
- ✓ prior surgical history
- ✓ your differential diagnosis and the condition you would like to rule out or confirm
- ✓ your degree of confidence on the diagnosis
- ✓ current creatinine/GFR level and weight and height for all CT or MRI requisitions
- ✓ additional pertinent information that will help radiologist understand patient needs

Legibility is very important if submitting a handwritten requisition

Contacting a Radiologist

➔ **TEXT or MBMD** is preferred way to reach us

➔ **FAX** is fine but may take longer for a reply.

➔ **Please reserve PHONE** calls, or drop by the office, to discuss COMPLEX cases or for stat requests

➔ **Do not PHONE** for:

- ER and inpatient CT reqs (they get done as reqs are received and pt available).
- ER and inpatient US reqs — write down when you would like scan done. *Unfortunately, there aren't enough US rooms/technologists to keep up with urgent US demand. Thus, many US guided procedures and US studies are delayed.*

INPATIENT studies are *prioritized*	**OUTPATIENT studies**
For in-pt urgent/stat studies: **Workdays (7a to 5p):** US - Send req and text radiologist requesting same day US. Sometimes US may happen the day after. CT - Send req to dept. Study should be performed within a couple of hrs. **Weekend or stat holiday daytime:** ER & stat in-pt CT - Call VGH on call Radiologist In-pt urgent CT - Fax or send requisition. Study normally performed and reported within a few hrs. In-pt urgent US or US guided procedure - Fax or send requisition and text local radiologist. Sometimes US can be performed on same day. **Nights (5p to 7a):** Call VGH rad	For out-pt stat or urgent studies: Send or fax requisition. Text radiologist if you require additional discussion. **Workdays (7a to 5p):** Fax req and text (or call) radiologist **Nights (5p to 7a), weekend or stat holiday daytime:** CT - Call on call VGH radiologist US - No US on call available *Text radiologist if your patient requires an earlier appointment*

Radiologist Cell Numbers

Dr. David Williams 780 995-3402	Dr. Gonzalo Ansede 250-231-2856	Dr. Bilal Khalil 250-512-7783	Dr. Elsabe Steenkamp 250-368-7383	Dr. Sue Babensee 250-512-9080

Medical Imaging Dept Extension Number: 3461

On Call Hours

Radiologists

- VGH radiologists cover on call hours — most scans are reported by VGH within one hour of being performed.
- Local radiologists read all non-urgent after-hours work.
- Non urgent CT reqs on weekends are normally done promptly and reported by local radiologists *(as long as on-call team has not been contacted).*

Technologists

- No formal US technologist on call schedule, but US lists common on weekend (in future may have US technologists on call).
- No MR on call service, but regularly scanning long hours on most weekends.

➤ On call KBRH CT technologists are showing signs of burn out ➤
Please think twice about requesting CTs during evenings/nights

Prioritization

Radiologists prioritize and triage using the BC MRI Prioritization Guidelines:

P1 — within 24 hours — *extremely hard to achieve currently*
P2 — within 7 days — *doable but abused*
P3 — within 30 days — *bottleneck, please consider P4*
P4 — within 60 days — *for follow up or long-range management and prevention*
P5 — specific date in long-term future — *for planned follow up*

Most common misunderstandings:

- Overuse of P1 or P2
- Chronic spine symptoms are a P4
- Chronic joint symptoms and instability are P4
- Headache with red flags is P3
- Seizure disorder is P4

Appropriateness Criteria

ACR Appropriateness Criteria Guide — assists referring practitioners make the most appropriate imaging or treatment request. If in doubt, write your question in requisition with all clinical details (more detail is better). *Radiology will protocol request accordingly.*

Breast general rule — mammogram for almost all complaints; add US for palpable lumps.
Appendix — US operator dependent; CT more accurate and you get answer straight away (but radiation dose); tend to go straight to CT especially if patient is a bit larger.
Outpatient CTs — require an estimated GFR ≤ 3 months in patients 65+ years, or younger with certain medical conditions.

Radiologist Reporting

LATE day CT scans — Usually read by 5 pm. If there is significant volume, there may be a delay.
Time consuming procedures — Some procedures take longer (i.e., Pleurex = 45min) and complex CT/MR studies can take up to an hour to generate all images. This delays reporting.
Access to reports — GPs need to sign in to MEDITECH to view all reports completed by radiologist.

Text radiologist if there is concern about wait time for a report and they will do as fast as they can.

Procedures Performed at KBRH

ULTRASOUND	
General Biopsy and FNA	Thyroid, breast, liver, nodes, pleura, superficial lesions… Renal & Trans rectal Prostate biopsies: To be decided by Nephrology or Urology Sarcoma biopsies: Preferably to involve local gen surgeon or sarcoma Dr due to potential for needle tract seeding Breast biopsies: Ideally gen surgeon should review histopathology
Abscess Drainage	Chest, abdominopelvic and superficial. Transgluteal approach possible for deep pelvic collections.
Thoracentesis & Paracentesis	+/- drain insertion — specify whether a tap or drain is required, vol of fluid to be drained and samples to be sent to pathology. If an outpatient, a bed will be required. *Commonly the number of procedures requested is in excess to available beds for the Medical Imaging dept.*
Pleurx Insertion	Long term tunnelled under the skin chest drain. Pt requires education, and nursing assistance must be arranged by referring physician prior to appointment.
DIAGNOSTIC MUSCULOSKELETAL ULTRASOUND	
Shoulder US	Performed by technologists
Diagnostic	Tendinopathy, bursitis, tendon tears, ganglia, muscle tears — refer to US; radiologist may need to send to MRI.
Small Superficial Lesions	Small lesions in extremities (less than 2-3 finger breadths) that are easily palpable are very amenable to ultrasound interrogation
Larger Deeper Lesions	Larger lesions perhaps best characterized on MRI
Carpal Tunnel	**Best done on MRI** (gold standard), but nerve can be seen on US for patients with thin small wrists.
ADDITIONAL NOTES • Only 3 US rooms available at KBRH. Insufficient for current volumes of urgent studies • Musculoskeletal ultrasound now being performed by some US technologists • A few US requisitions are returned and MR (or other care) will be suggested	
NOTES ON THERAPEUTIC MUSCULOSKELETAL	
Steroid and/or Local Anesthesia Infiltration	Soft tissue structures — most common are tendon, bursa, and joint injections. Hyaluronic acid is expensive ($500+ per dose) and not covered by MSP. Patients need to purchase and bring hyaluronic acid to their appointment — radiologist will inject.
Intra-articular Infiltration	Can be done by ultrasound or fluoroscopy, but best performed on FLUOROSCOPY as intra-articular injection is more objectively confirmed.
Dry Needling, Barbotage and Platelet Rich Plasma Injections	Currently no possibility of offering PRP injections For some tendinopathies, such as rotator cuff calcific tendinopathy, tennis elbow and patellar tendinopathy infiltration +/- dry needling is available locally.
Specialist Procedures	Such as posterior interosseous nerve block are normally requested by specialists.

ADDITIONAL NOTES ** refers only to therapeutic musculoskeletal procedures, NOT to any US request or query **

- Text Dr. Ansede if you would like a therapeutic msk procedure done more quickly. Sometimes extra procedures can be performed once US rooms become available after a days' list, but an Xray technologist must be available to assist.
- Dr. Ansede is happy to discuss novel therapeutic msk techniques or technique tweaks. Text or call.
- The larger the patient, the more complicated some procedures get — but happy to attempt as long as it is safe to do so.

FLUOROSCOPY	
Barium Work	Doing less and less of this work. No longer doing barium enemas — replaced by CT colonography (or CT virtual colonoscopy).
Joint Injections, Aspiration and Arthrograms	Will do ultrasound to confirm joint fusion and will do aspiration after.
Specialist Procedures	AV fistulogram and sialogram are rare — don't request. Sialogram: Do alternatives such as MR and very high-resolution imaging.

CT	
Biopsy	Lung. Pancreas/Spleen (rare). Sometimes liver, renal, adenopathy.
Drainage	Abdominopelvic collection and deep collections (not amenable to US).
Enterography	Good test for small bowel pathologies but MR enterography mostly better.
Virtual Colonoscopy	Colon is infiltrated with CO2 and distends, which allows radiologist to look through entire colon for polyps, flat lesions, and strictures/masses. Normally requested by General Surgeons or adequate clinical indications by GP. Patient must follow a two-day bowel prep plan.

CT Contrast
Many scans require IV contrast. No significant impact on mortality or morbidity. Contraindications include GFR < 30. PE and Angiograms require contrast. Order bloods for GFR estimation when requesting CT in the over 65s and those with diabetes or renal disease.

MR

MR unit is portable and claustrophobic — no procedures or sedation possible.
No MR breast or cardiac at KBRH currently — hoping these procedures will be available once we get a new MR unit. A new unit is expected in 2024-26 (first on the capital list for IH region). A new building must be built to house unit.

MR Contrast
While increasingly shown to be safe, they are avoided unless really needed. Do not specify on requisition as radiologist will decide if contrast is needed. Provide renal function information on requisition if possible.

Chronic Pain Specialty

See **KB Chronic Pain Physicians Referral Pathways At-A-Glance** guide (also available on the KBRH Medical Imaging & Nuclear Medicine's Pathways page).