A Peer-Review Tool for X-ray Technologists to Assess Image Quality in General Radiography

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Diagnostic Accreditation Program Accreditation Standards 2014

- **Mandatory for medical imaging billings**
- **Accreditation requirements**
  - DQI2.5: Clinical audits are performed within the medical imaging service
  - DQI2.5.5: Image/examination quality review is performed monthly to provide technical staff with feedback

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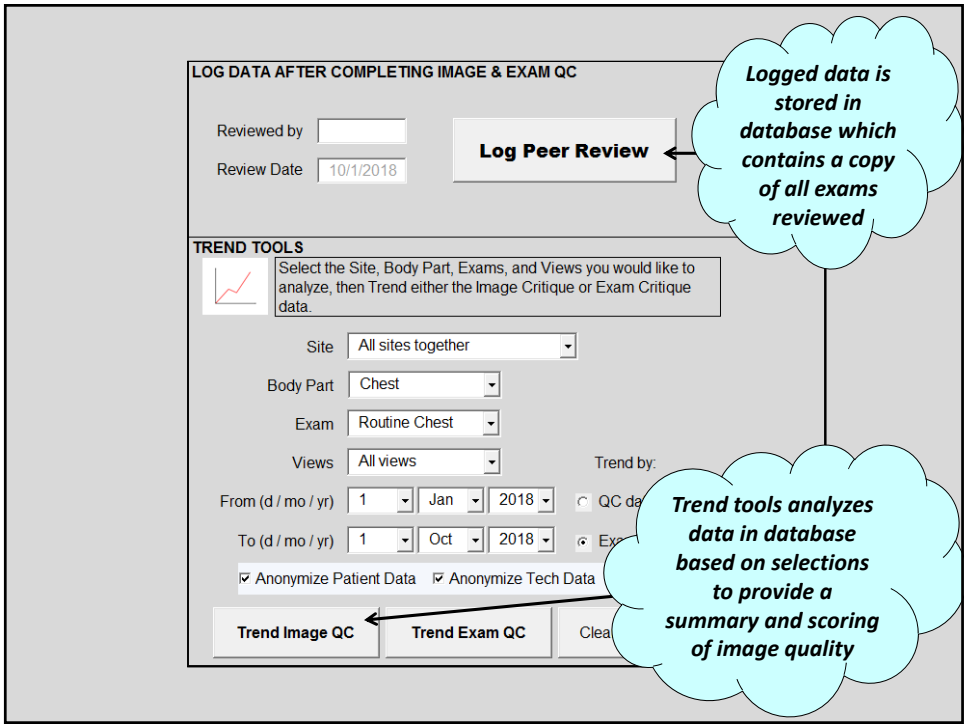
Peer-Review Requirements

- **Standardized review**
  - Consistent criteria and scoring method
- **Monthly feedback**
  - Automated data analysis and regular review by staff
- **Required improvements identified**
  - Education boards created, equipment purchased or repaired



Lower Mainland Peer-Review Audit Schedule

- A minimum of 10 exams per body are reviewed for Image Quality twice per year

Period 1	Period 2	Exams to Review*
January	July	Routine Chest, Portable Chest
February	August	Abdomen, Portable Abdomens
March	September	Pelvis/Hips, Portable Pelvis
April	October	Knees, Ankle & Foot
May	November	Cervical Spine, Lumbar Spine
June	December	Shoulder, Elbow, Wrist/Hand
Optional**		Sternum, T-spine, Sacrum/Coccyx, Femur, Tibia/Fibula, Humerus, Radius/Ulna, Ribs, Skull, Sinuses, Facial Bones, Mandible

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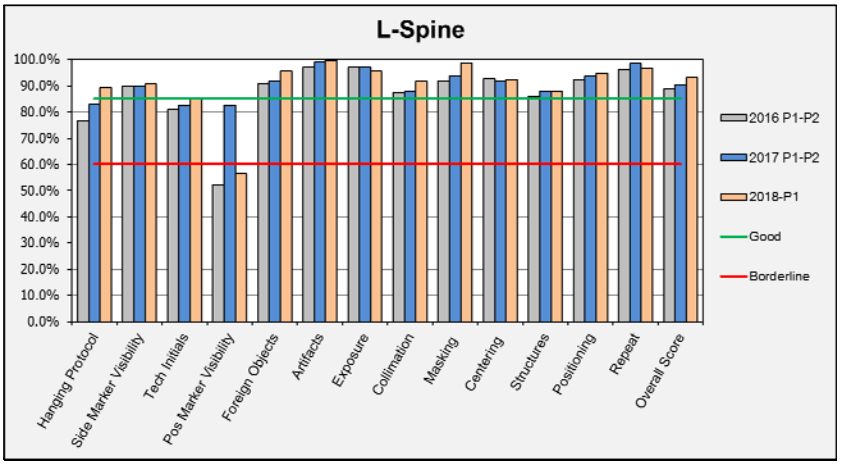
Regional Results



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Overall Regional Results

	Improvements, purchases, and education
Year 1	• Reviewed imaging criteria and protocols • Reset exposures algorithms • Reviewed imaging plate cleaning QC program • Manufactured a CR/DR cassette protector
Year 2	• Purchased: CR plates, horizontal grids, positioning sponges, Rt/Lt lead markers • Education: QC boards, guest lecturers, physicians lectures
Year 3	• Purchased: Positional lead markers, positioning sponges • Education: All sites created a QC board to post image review results • Support: Supervisors provide positioning "hands on" support as required

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Case Study 1: X-table Lateral Hip

LOWER MAINLAND MEDICAL IMAGING

SITE: A	STANDARD OPERATING PROCEDURE
Date: 2018. 09. 01	VIEW: X- Table Lateral Hip

1 Position patient at MATTRESS edge TO reduce OID. For wall detector align x-ray tube + detector. For free detector attach grid + place into stand. Angle patient 45 degrees.	2 Raise patient's unaffected leg onto sponge.	3 Position tube so collimation is midline superior/inferior (femur is in the posterior third) and includes all required structures. CONE tightly.
4 Apply decubitus filter to even out anatomy density differences.	5 If not querying a fracture, internally rotate the patient's affected leg	6 Set an appropriate MANUAL technique EXPOSE

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Outcomes after education & training

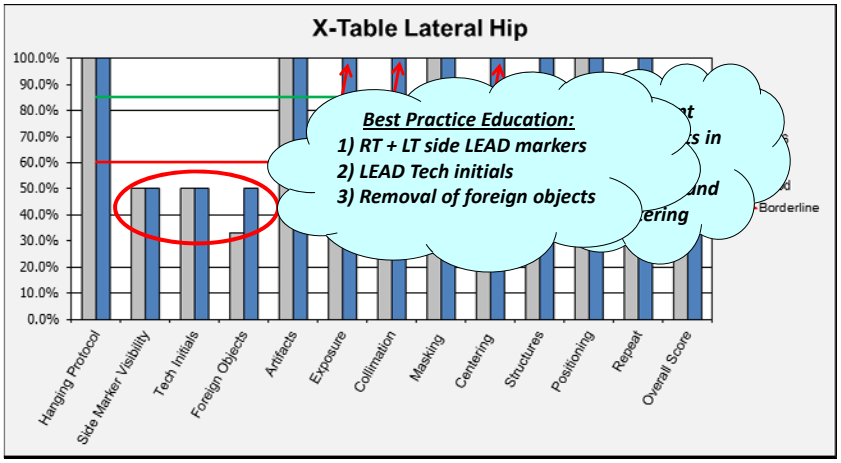

Image Quality Peer Review Tool Conclusions

- Meets Provincial accreditation requirements
- Efficiently & effectively provides ongoing feedback
- Identifies clinical challenges facilitating opportunities for site specific and regional improvements
- Complements repeat / reject analysis and helps stabilize and reduce reject rates
- At inception image quality average was 70% and currently 3 years later rests at an average of 90%