

**APPENDIX. Point-of-care-ultrasound for the assessment of post-renal transplant recipients – Learning objectives**

1.0 Overview of point of care ultrasound

- 1.1 Point of care ultrasound versus diagnostic imaging
- 1.2 Indications and contraindications for point of care
- 1.3 Consensus statements of the International Federation of Emergency Medicine (IFEM) and Canadian Association of Radiologists (CAR)
- 1.4 Point of care ultrasound for the use in the post-transplant setting

2.0 Understand how ultrasonic sound creates diagnostic images

- 2.1 Piezoelectric effect and sonographic image formation
- 2.2 Image orientation: longitudinal, depth, and transverse axis
- 2.3 Terminology: echotexture, echogenic, hyperechoic, hypoechoic, homogenous, heterogenous, shadow, enhancement
- 2.4 Image artifacts: acoustic enhancement and posterior shadowing

3.0 Understand ultrasound controls as it pertains to point of care scanning

- 3.1 Focus: beam width and lateral resolution
- 3.2 Gains & time gain compensation: contrast resolution
- 3.3 Depth & scan line density: temporal resolution
- 3.4 Probe descriptions, footprint, and optimal choices
- 3.5 Doppler Imaging: principles of doppler, doppler controls, and doppler recognition

4.0 Kidneys sonography

- 4.1 Normal sonographic appearances of the kidney and the transplant kidney
- 4.2 Procedural approach to scanning the recipient kidney
- 4.3 Hydronephrosis and grading, hydronephrosis versus parapelvic cysts
- 4.4 Doppler Imaging and doppler optimization
- 4.5 Recognition of renal artery and vein
- 4.6 Transplant complications: perinephric collection, poor global perfusion, thrombosis of renal vessels, kinking of the main renal vessels