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