Supplementary Material 1

Ultrasound Protocol: Focused Head Scan

**Indications**
Indications for focused neonatal head ultrasound (US) include but are not limited to:

1. Evaluation for intraventricular hemorrhage.
2. Hydrocephalus evaluation and follow-up.
3. Brain edema in hypoxic ischemic encephalopathy follow-up.

**Contraindications**
There are no contraindications to neurosonography.

**Analgesia and/or Sedation**
Typically not needed.

**Imaging Technique**
Neurosonographic examinations should be conducted with high frequency phased array or linear transducers that can fit within and image through the anterior fontanelle (Image 1a, 1b).

The coronal view, by convention, should have the patient's right side on the left side of the image. Marker (notch) to the patient right. Representative coronal views should be obtained by sweeping through the entire brain from anterior to posterior using the anterior fontanelle as a sonic window and should include, sequentially:

- Anterior view of orbital cones, falx, frontal lobes and sphenoid bone. (1 image)
- Frontal horns of the lateral ventricles and interhemispheric fissure, corpus callosum, cavum septum pellucidum, caudate nuclei, putamina, globi pallidi, and Sylvian fissures. (1 image)
- Lateral ventricles slightly posterior to the foramina of Monro where the lateral and third ventricles communicate. Include the pons and medulla, thalami, and choroid plexus. (1 image)
- Echogenic choroid plexuses at the posterior aspect of the lateral ventricles at the level of trigones. Include periventricular white matter lateral to posterior horns of the lateral ventricles. (1 image)
- Area posterior to the occipital horns. Include parietal and occipital lobes and the posterior interhemispheric fissure. (1 image)

The sagittal view, by convention, should place the anterior aspect of the brain on the left side of the image. Marker (notch) pointing forward. The right or left side of the brain should be clearly annotated. Sequential representative sagittal views are obtained with appropriate degrees of left and right transducer angulation because the frontal horns are somewhat more medial than the bodies of the lateral ventricles. These views should include the following:

- Midline sagittal view to demonstrate corpus callosum, cavum septi pelucidi, 3rd and 4th ventricles, pons. (1 image)
- Right and left parasagittal views of the lateral ventricles showing the choroid plexus and caudothalamic groove. (2 images, one for each side)
- Far right and left parasagittal views showing parietal and temporal lobes (2 images, one for each side)
- Optional pulsed Doppler assessment of the midline anterior cerebral artery resistive index, as needed in HIE assessment.

**Complications**
No known complications.
Reference