PBTC Standard MR Protocol for the Brain

0) Localizer of Choice
Note: Efforts should be made to have same slice locations and thicknesses for sequences 2, 3 and 4.

1) Axial T1-weighted spin echo (SE) whole head, TR/TE = (500-700)/minimum full, receiver bandwidth (RB) = ± 16 kHz, FOV = 18-24 cm, slice thickness/gap = 4/0 (mm), NEX = 2, no phase wrap option, matrix = 256 x 192 (frequency x phase), frequency direction = A/P

2) Axial T2-weighted fast spin echo (FSE), TR/ETE = (4000-6000)/80-100, ETL = 10-16, RB = ± 16 kHz, FOV = 18-24 cm, slice thickness/gap = 4/0 interleaved, NEX = 2, matrix = 256 x 192, flow compensation option, frequency direction A/P

3) Axial FLAIR, TR/TI/ETE = 10,000/2200/162, ETL = 16, RB = ± 32 kHz, FOV = 18-24 cm, slice thickness/gap = 4/0 mm, NEX = 1, flow comp, frequency direction A/P

4) Axial T1-weighted spin echo (SE) post contrast whole brain, TR/TE = 500-700/minimum full, receiver bandwidth = ± 16 kHz, FOV = 18-24 cm, slice thickness/gap = 4/0 (interleaved acquisitions), NEX = 2, frequency direction = A/P, matrix = 256 x 192

Protocol for Spine - Sagittal T1 images should be after gadolinium
Axial T1 images are after gadolinium
Axial T2 are optional

1. Sagittal T1-weighted spin echo, TR/TE = 400/minimum full, FOV = 24 cm can increase to 48 cm with 0.75 partial FOV option, thickness/gap = 3/0 mm, spatial sat A/P, NEX = 2, frequency direction = S/I, receiver bandwidth = ± 16 kHz, matrix = 192 x 256, can increase to 384 x 512

2. Axial T1-weighted spin-echo, TR /TE = 600/minimum full, FOV = 16 cm, thickness/gap = 4/1, NEX = 2, frequency direction R/L, matrix = 256 x 224, receiver bandwidth = ± 16 kHz

3. Axial T2-weighted FSE, TR/ETE/ETL = 4000/85/12, FOV = 16 cm with 0.75 partial FOV option, thickness/gap = 4/1 mm, frequency direction R/L, NEX = 2, matrix = 256 x 256, receiver bandwidth = ± 16 kHz, flow comp option, FSE-XL if available

Spine: Axial T1 and T2 images should be obtained from tip of conus to end of thecal sac.