

Compressed SENSE in practice – MR in the Emergency Department

Maintaining **exceptional neuro image quality**
while significantly reducing scan time

Challenge

Barrow Neurological Institute in Phoenix, AZ, is a premier destination for neurology and neurosurgery, providing a complete spectrum of care from diagnosis through outpatient neurorehabilitation. The facility relies on superb-quality MR scans for critical diagnostic information. Speed at the expense of image quality is never an option.

Solution

The addition of Compressed SENSE allows Barrow to maintain top-quality neuro imaging while gaining time savings of 20%–40%, easing the daily schedule to be able to accommodate more in-patient imaging and providing the speed to make MR more practical for exams of emergency department patients.

John P. Karis, M.D.

John P. Karis, M.D., is Director of MRI and brain imaging for the Department of Neuroradiology at Barrow Neurological Institute, Dignity Health St. Joseph's Hospital and Medical Center. Dr. Karis is board certified by the American Board of Radiology. Dr. Karis is a member of the Radiological Society of North America, the American Society of Neuroradiology, the American College of Radiology, and the International Society of Magnetic Resonance in Medicine.

Barrow Neurological Institute in Phoenix, AZ, is an extremely high-volume neuro center with multiple Philips 1.5T and 3T MR units. Adding Compressed SENSE to its MR scanners is providing a 20% improvement in 2D scan times and up to a 40% improvement in 3D scan times with no sacrifice of image quality. The time-savings gained eases the daily schedule, providing the team with the flexibility to accommodate more patients from the emergency department, as well as working other non-emergency inpatient scans into the schedule.

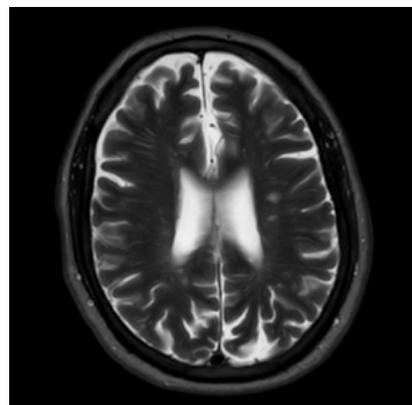
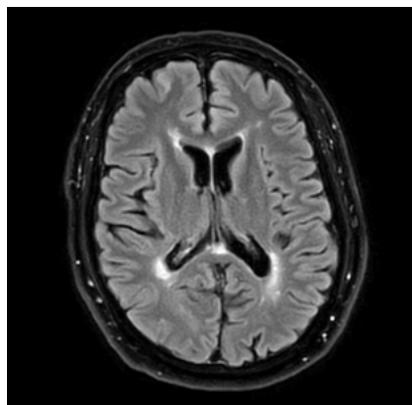
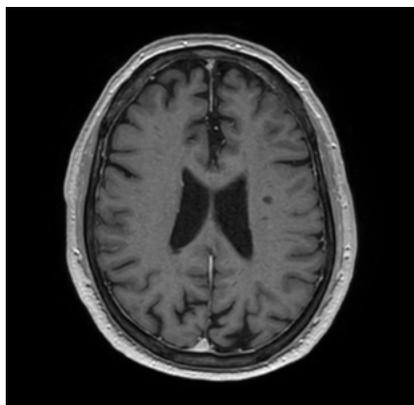
“ We are essentially running our standard protocols and just turning Compressed SENSE on and seeing a 20% reduction in scan time. None of the physicians know if it's a Compressed SENSE scan versus a non-Compressed SENSE scan when they're reading.”

John P. Karis, M.D.
Director of MRI and brain imaging
Department of Neuroradiology at Barrow Neurological Institute

Uncompromised images, **faster**

Dr. John Karis, Director of MRI and brain imaging, says that Barrow is currently using Compressed SENSE for brain scans and spinal exams. “With Compressed SENSE you get a very similar result with a significant reduction in scan time with remarkable consistency,” he notes. The improvement in exam time means that Barrow can more easily accommodate emergency department patients, as well as other in-patients, within the existing schedule.

“Our 3Ds post-contrast are high-enough quality to navigate around the brain with stereotactic equipment,” he explains. “Reducing the time on longer series for our ED brains when we use contrast is a pretty big deal within the ED environment when you’re trying to obtain scans on any one body part in less than 10-15 minutes. If you’re running an ED, MR time is key to everything. ED physicians will stop ordering MRs if their patients have to wait.”



“ You get enough information to answer the question diagnostically, and that’s your goal in all of MR. You want the most efficient scan that answers the clinical question at hand.”

John P. Karis, M.D.
Director of MRI and brain imaging
Department of Neuroradiology at
Barrow Neurological Institute

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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