Innovation Portfolio of David Lardizabal, M.D.

1. Seizure video education. The video education was used to train the M3 students in differentiating epileptic motor seizures and psychogenic non-epileptic seizures. The pretest and post-test results of this training showed a remarkable improvement of their clinical recognition. There was an accuracy of more than 75% and 87% for recognizing epileptic and non-epileptic seizures, respectively. The students had 96% excellent rating in this education activity.

2. Simulation training of convulsive and non-convulsive status epilepticus using high fidelity mannequin. The continuum article for Status Epilepticus in 2010 was used as our standard reference for teaching status epilepticus. The medical students worked as a team and did role playing in treating status epilepticus. Computer order entry, air way management, AED IV administration, EEG recognition of ictal rhythmic activity were taught. The students were debriefed on their performance using the video recording of their simulation. The students scored 80% or better in their post-simulation quiz on status epilepticus. More than 95% of the students favored simulation training than didactic teaching. These were supervised by the Clerkship director.

3. Acute stroke simulation. Using an standardized patient (actor), the M3 students did acute stroke management and decision analysis for thrombolytic therapy. Proper performance of the NIHSS was done. The students were all required to do the NIHSS website training (American Stroke Association) before doing the simulation training. Debriefing was done by reviewing their videos. More than 95% of the student favored the simulation training and the feedback of their inpatient rotation reflected their better understanding of stroke management. These were supervised by the Clerkship director.

4. Simulation training of lumbar puncture. Starting academic year 2011, the students were all required to perform lumbar puncture simulation and CSF pressure measurements. The students were taught in the proper sterile technique on the use of the spinal needle and manometer. The students were directly supervised by the Clerkship director.

5. On-Line Case Studies. The clerkship director used the AAN Education website and use their examples as the template for the on-line case studies. This helped in the standardization of End of Block review for the students. There was an improvement of the shelf-examination scores for 2010-2011. The median shelf score increased from an average of 64 to 74.

6. Neurological examination workshop. The clerkship director worked with the M3 students in improving their neurological examination skills. The students worked in pairs and supervised directly in the proper technique. An on-line quiz was done after the work-shop. There was a 100% participation in the work shop and on-line quiz.

7. Neurological examination Mind-Map. Utilizing the website of Mind42, the Clerkship director developed a mind map for the M1 to M4 students. This integrated clinical techniques and videos.

8. Status epilepticus Mind-Map. The mind map was also utilized in the debriefing of M3 students after the status epilepticus simulation. This reinforced their learning.

9. First seizure Mind-map. This is an online resource for the students in the work up of the first seizure. This was used as a supplement to their didactic in first seizure management.

10. Flash Cards. An online flash cards using the study stack website was used. This was used to help the students review their neuroanatomy.

11. MU Neurology Twitter a(@muneurology) and Grand Rounds Blog (grandroundsnenro.blogspot.com). The students were requested to have a twitter account. This would help them keep updated on
neurology research, grand rounds and important neurology education announcements.

Projects in Development:

NeuVi’s (Neurology Videos). This is a combination of computer video technology that trains the students in the clinical interview, neurological examination, localization, and plan of care. This is to prepare them before they start their outpatient rotation.

Iphone/Ipad/Android Neurology app is being developed.