

Neurosurgeons as Neurointensivists

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- President, CHYNA, LLC
- Chief Medical Officer, NuHope, LLC
- Treasurer, NeuroPoint Alliance, Inc.

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Neurosurgeons as Neurointensivists: History

- Neurosurgeons have been pioneers in the operative and non-operative management of critically patients with neurological dysfunction - particularly in the areas of CNS trauma and cerebrovascular disease.
- Decompressive craniectomy, ICP/CPP/CBF/Brain oxygen monitoring, osmotic diuresis, triple-H therapy, spinal cord cooling, etc.

Neurosurgeons as Neurointensivists: ABNS

- The American Board of Neurological Surgery (ABNS) includes neurocritical care as part of the definition of Neurosurgery.
- The ABNS gives one certificate for Neurosurgery.
 - There is no ABNS certificate for neurocritical care or any other subspecialty.
 - Recently, the ABNS has been working with the SNS to develop a CAST process for subspecialty certification.

Neurosurgeons as Neurointensivists: UCNS

- From 1998-2003 organized Neurology created the United Council of Neurologic Subspecialties (UCNS) to accredit subspecialty programs and certify neurological subspecialists, including neurointensivists.
- Leaders of all the Neurology organizations, including the American Board of Psychiatry and Neurology, sit on the UCNS Board of Directors.
- In many academic medical centers, neurocritical care is under the direction of UCNS certified neurology neurointensivists.

Neurosurgeons as Neurointensivists: Neurocritical Care Society (NCS)

- NCS was created in 2002 to improve the “care and outcomes of patients with life-threatening neurological illnesses by promoting quality patient care, professional collaboration, research, training and advocacy”
- Founded as a multidisciplinary society
- Continues to be multidisciplinary but now dominated by neurology
- The Chair of the UCNS Board of Directors sits on the NCS Board of Directors

Neurosurgeons as Neurointensivists: The Leapfrog Group

- The Leapfrog Group
 - Founded in 1998
 - Composed of 24 large employers, 37 healthcare purchasing organizations and liaisons from CMS, AHRQ, OPM, DOD and other government organizations.
 - Uses its constituent members' health care purchasing power to influence hospitals in regard to quality and affordability issues.

Neurosurgeons as Neurointensivists: The Leapfrog Group

Leapfrog requirements for ICU physician staffing

Quality of care in hospital ICUs is strongly influenced by whether intensivists are providing care.

Leapfrog defines intensivists as:

Board-certified physicians additionally certified in critical care medicine

And neurointensivists as:

Neurointensivists have completed a United Council for Neurologic Subspecialties (UCNS) certified fellowship training program in neurocritical care.

Existing physicians must obtain certification using the grandfathering process established by UNCS to be considered a neurointensivist.

Neurosurgeons as Neurointensivists: The Leapfrog Group

- Because of the potential market clout of Leapfrog, hospitals strive to meet Leapfrog criteria for staffing intensive care units.
- This has had an impact on Neurosurgeons as neurointensivists at both academic and community hospitals.
- Increasing numbers of Neurosurgeons have been excluded from caring for patients in a critical care setting - even if UCNS certified neurointensivists are not available.

Neurosurgeons as Neurointensivists: Present Situation

- Most Neuro-ICU patients are Neurosurgical patients
- Despite this, we are losing our role as neurointensivists
 - Academic Medical Centers
 - Many Neuro-ICUs are run by UCNS certified neurologist neurointensivists.
 - There are only 2 CAST certified neurosurgical fellowships in Neurocritical Care.
 - Community Practice
 - It is becoming increasingly difficult for neurosurgeons to care for their patients in ICUs.
 - Closed units are run by general intensivists, tele-intensivists etc.

SNS Neurocritical Care Task Force

- Started in 2010
 - Harbaugh, Couldwell, Rosenwasser, Valadka, Timmons
- Letters to UCNS and Leapfrog regarding ABNS certification of neurosurgeons as neurointensivists
 - No progress
- Discussions with NCS regarding the certification of neurosurgeons as neurointensivists
- Letter from NCS to Leapfrog supporting our request to make the case for neurosurgeons as neurointensivists through the ABNS/CAST process

ABNS/CAST Process for Neurosurgeons as Neurointensivists

- Recognize two levels of certification
 - ABNS certification allows neurosurgeons to care for their own patients in an ICU setting.
 - This may be in collaboration with other intensivists.
 - ABNS/CAST certification for those neurosurgeons who want to make Neurocritical Care a major part of their careers
 - Requires additional training during or after residency.
Programs / trainees to be accredited / certified by CAST.

Neurocritical Care at Penn State: Neurocritical Care Unit (NCCU)

- 16 bed NCCU and a 15 bed Neuro-intermediate Care Unit
- Neurosurgery, Neurology and Neurotrauma patients
- Neurointensivists, stroke neurologists and neurosurgeons have admitting privileges to the NCCU
- Coverage by Neurosurgery and Anesthesiology residents, fellows and three nurse practitioners

Neurocritical Care at Penn State: Neurointensivists



Phil Villanueva, MD
Neurosurgery



Chris Zacko, MD
Neurosurgery



Lisa Sinz, MD
Anesthesiology &
Neurosurgery



John Stene, MD, PhD
Anesthesiology &
Neurosurgery



Bob Harbaugh, MD
Neurosurgery

- Drs. Villanueva and Zacko are co-Directors of the Neurocritical Care Unit
- Neurocritical care unit coverage occurs in one week blocks
- No scheduled OR, clinic or general call responsibilities during that week

Neurocritical Care at Penn State: Neurointensivists

- During weeks not assigned as neurointensivists, the neurosurgeons and anesthesiologists are gainfully employed in their other areas of clinical interest.
- Villanueva - Head Trauma
- Zacko - Spine Trauma and Spinal Surgery
- Stene - Neuroanesthesiology
- Sinz - Neuroanesthesiology and Simulation Lab
- Harbaugh - Vascular Neurosurgery and duties as assigned

Neurocritical Care at Penn State: Neurosurgical Resident Education

- Six months on Neurocritical Care service as PGY-1
 - Learn all aspects of critical care in a multidisciplinary setting
 - Not assigned to other duties during this time
 - Take night call with more senior residents
- At least two months/year in each year PGY 2-4
 - May go to OR
- PGY 5 residents have oversight role for six months
- PGY 6 residents may elect enfolded fellowship time
- PGY 7 Chief residents have oversight role for six months

Neurocritical Care at Penn State: Neurosurgical Resident Education

PGY1	White			Neurology & Surgery Specialties		
PGY2	Red	White	Blue	Pediatrics	Off Service	Clinical Elective
PGY3	Red	White	Blue	Pediatrics	Off Service	Clinical Elective
PGY4	Red	White	Blue	Pediatrics	Off Service	Clinical Elective
PGY5	Red and White			Blue and Pedi		
PGY6	Research / Fellowship / Independent Study					
PGY7	Chief Resident Red and White			Chief Resident Blue and Pediatrics		

Red Service - Vascular, Endovascular, Tumors, Skull Base

Blue Service - Spine, Functional, Peripheral Nerve, Radiosurgery

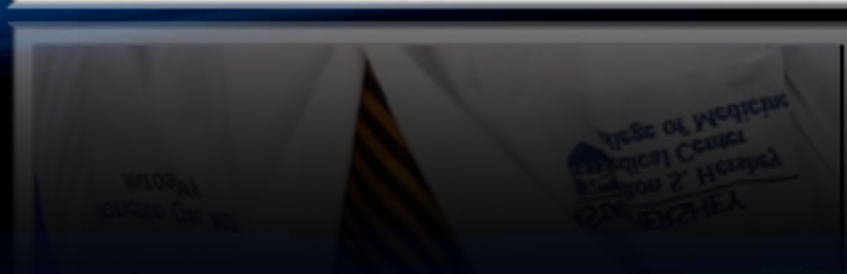
White Service - Neurocritical Care

Off Service - Neuroradiology, Neuropathology, Neurophysiology, Neuroanatomy

Elective - Clinical elective on a clinical service chosen by the resident and Program Director

Neurocritical Care at Penn State: CAST Fellowship

- CAST approved fellowship in Neurocritical Care 2011
- Our first fellow, Jonathon Cooke, will begin in July 2012



Neurocritical Care at Penn State: Faculty Productivity

● Neurosurgery Faculty

- 25 full time faculty
- 18 clinical faculty, 15 are Neurosurgeons, one only sees clinic patients and three practice at other sites
- 11 Operative Neurosurgeons at PSHMC

Faculty Member	wRVU /c FTE FY 2009	wRVU / cFTE FY 2010	wRVU / cFTE FY 2011
KC	8,445	8,116	9,862
PV	6,329	6,776	6,484
JS	15,259	13,132	15,446
MD	8,193	7,648	8,282
RH	23,879	22,115	19,492
KH	4,159	7,374	5,547
TR	9,759	7,026	8,101
JM	10,551	9,029	10,715
MI	8,379	8,575	8,735
MS	9,061	12,507	13,359
CZ	NA	10,017	12,871
Mean	10396	10210	10809
Mean NCC	15104	12969	12949

Summary

- Neurocritical care is an integral and vital part of Neurosurgery.
- Academic Neurosurgery Departments should strive to provide residents and fellows with an excellent educational experience in neurocritical care and with role models of neurosurgeons as neurointensivists.
- Subspecialization in neurocritical care plus an additional neurosurgical subspecialty is a viable model for an academic practice.

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Thank You for Your Attention