A quarterly publication for friends of the Department of Neurosurgery

Search for perfection in neurosurgery—or any medical practice—mapped out by UCLA quality leader

There is no reason that you can’t strive for perfection while practicing neurosurgery, according to nationally recognized quality leader, Neil Martin, MD, FAANS, professor and chair, Department of Neurosurgery, Geffen School of Medicine at UCLA. He mapped out the process for doing so during his NeuroSafe 2016 keynote presentation titled, Chasing Perfection in Neurosurgery.

In his own quest for perfection as director of the UCLA Quality Council, Martin listed four factors that play into poor results for quality measurements such as mortality and re-admission:

1. Complexity of the processes used
2. Variation in key factors, such as protocols, equipment, personnel
3. Imprecise data about outcomes and process measurements
4. Un-coordination among all the parties involved.

(continued on page 2)

National event hosted by department focused on quality and safety in neurosurgery

“This was the first such event of its kind,” said neurosurgeon Matthew Hunt, MD, U of M Department of Neurosurgery. “We believe it provided a great outlet for much of the work we do to make our care better. Afterwards, I was even more impressed by the need for the event.”

Hunt is describing NeuroSafe 2016, held July 14-16, at the Oak Ridge Conference Center in Chaska, MN, that was hosted by the U’s Departments of Neurosurgery and Continuing Education. Neurosurgeons from all over the country attended the 2.5-day event to present, discuss and/or learn about the latest advances in improving quality and safety in neurosurgery. Hunt led the team that shaped the event.

The inaugural symposium was unique and struck a chord with attendees. “I think the meeting turned into more than we expected,” said keynote speaker Daniel Guillaume, MD, MS, Chief Pediatric Neurosurgeon, U of M Masonic Children’s Hospital. “The quality of the attendees and presenters was very high…the setting was one in which people could relax and just talk about the issues. It really ended up being a working meeting.” Guillaume leads the Neurosurgery Department’s local efforts to improve safety and quality.

The brainchild of Department Head Stephen Haines, MD, NeuroSafe 2016 grew out of work the department did to create Vision 2033, its 20-year strategic plan. Safety is one of the pillars of that plan. “The importance of patient safety is obvious,” said Haines. “We believe that a national conversation about this in neurosurgery is needed and decided to begin that conversation.”

The conversation will continue with NeuroSafe 2017, scheduled for July 20 – 22, in Minneapolis, MN.
Search for perfection, continued

Given these factors, Martin still believes perfection is possible if you pay systematic attention to quality and safety. His department’s efforts include comparing their own results to those of their peers to comprehensively assess their performance. They also use quality improvement practices such as value stream mapping, a lean manufacturing process designed to analyze the current state of a series of events (e.g., all the steps related to performing a surgery). The analysis becomes the basis for designing a more perfect future state.

Another step Martin’s department took was to define a perfect surgery, which gave them another benchmark against which to measure themselves. To achieve surgical perfection there must be:

- No mortality
- No post-operative complication
- Symptom resolution
- A post-operative stay of two days or less
- Discharge to the patient’s home by noon
- No surgery-related readmissions
- No need for repeat surgery.

They also instituted a weekly mortality review and created data-driven dashboards for each surgeon. Reviewed monthly, the dashboards include the number of cases, re-admissions, and deaths.

Martin reminded NeuroSafe 2016 attendees about two trends:
1. Healthcare insurers moving towards more of a value-based payment system in which doctors/hospitals are paid based on the value they provide
2. Patients pre-assessing the performance of the doctors they choose to see. As a result, quality of service is becoming even more important in the healthcare marketplace.

In summary, Martin advised everyone to:
- Eliminate the flaws
- Improve every element
- Expand the possible.

Call for 2017 Abstracts

Anyone interested in submitting an abstract for NeuroSafe 2017 has until May 1, 2017, to do so. Abstracts are to be 200-300 words long and must be submitted electronically to the program committee.

Key topic areas include:
- Quality & safety improvement efforts across all practice settings
- Quality & safety outcome measures
- Quality & safety challenges
- Quality & safety: leading the national conversation

Please contact nsafe@umn.edu for more information.

Time Out to Reflect on Quality & Safety in Neurosurgery

NeuroSafe 2017 Symposium
July 20 – 22, 2017
Presented by University of Minnesota Department of Neurosurgery

From left, Drs. Stephen Haines, Neil Martin and Matthew Hunt

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Using national databases to fine tune quality service, improve healthcare

A leader in the development and use of national healthcare databases, neurosurgeon Anthony Asher, MD, FACS, of the Carolina Neurosurgery & Spine Associates in Charlotte, NC, was a key force in launching the National Neurosurgery Quality and Outcomes Database (N\textsuperscript{2}QOD) in 2012. He currently serves as its director.

During his NeuroSafe 2016 keynote speech, Asher focused on Advancing Patient-centered Spine Care through Prospective Patient Care Registries. His focus made sense. Spinal disorders are the second most common reason adults visit a doctor. Spine care costs in the U.S. exceed $90 billion annually. While use of common spine procedures increased dramatically over the last decade, Asher noted that an estimated 10–25% of them were either unnecessary or ineffective.

Thus, the stage was set for S\textsuperscript{2}QOD – Spine Surgery Quality Outcomes Database – wherein 30-day surgical morbidity and three-month/one-year improvements in pain, disability, quality of life, and return to work after common spine procedures were analyzed.

78 sites and 950 surgeons throughout the United States participated in the data-gathering effort. More than 18,000 patients were enrolled. The goal, according to Asher, is to understand the data well enough to predict where things can go wrong and then prevent them from happening. He suggests using major outcome drivers identified in N\textsuperscript{2}QOD predictive models to improve care.

S\textsuperscript{2}QOD highlights:

- Excellent clinical and economic effectiveness can be achieved in ambulatory surgery settings
- Minimally invasive surgery may not have as many benefits as previously described
- Appropriately selected elderly patients may benefit from aggressive surgical interventions
- BMI does not seem to influence outcomes in lumbar decompression or fusion
- Excellent improvement in lower back pain can be achieved in decompression without fusion for lumbar stenosis
- There is limited value to fusion versus revision discectomy for recurrent herniated nucleus pulposus.

While the results may be surprising in some cases, Asher believes that this kind of evidence-gathering effort helps more precisely guide improvements in both cost and quality. When you’re aiming at something, it’s nice to know where the target is.

Exercise sets stage for quality & safety conversations

It’s not often that a neurosurgical conference begins with an exercise designed to get enough common ground established that it encourages conversation among participants. But that’s how NeuroSafe 2016 began, and participants loved it, according to Barbara Daiker, Director, U of M Neurosurgery Department Clinic Operations and Faculty Practice.

“We believed that quality and safety was something that needed to be discussed, not just lectured. This unusual exercise helped set the stage for those conversations to happen,” she added.

The Minnesota Landscape Arboretum in Chaska provided the setting. Teams of five members each were unleashed on the Arboretum grounds, tasked with finding clues that helped inspire them to think about what it means to be a member of a medical leadership team dealing with overcoming barriers to achieving shared goals, solving challenges, and improving communication.

Participants also learned something about the Arboretum. “One of the clues was stashed in the Andersen Horticultural Library,” said Daiker. “While searching for it, teams were exposed to a catalog of U of M innovations that led to the Honeycrisp apple.”
Looking at the role good teamwork plays in good patient care

What difference does it make if your surgical team has highly developed nontechnical skills such as situational awareness, teamwork, leadership, decision making, and communication? It could mean the difference between life and death.

Douglas Cochrane, MD, FRCSC, has spent a lot of years watching how surgical teams perform in operating rooms. His own experience, coupled with a ton of research, has led him to believe that nontechnical skills may be as or more important than technical skills when it comes to positive patient outcomes. He brought those beliefs to his NeuroSafe 2016 keynote presentation, Teams, Competence and Safety.

Cochrane backed up his beliefs with a study that showed a significant decline in patient mortality after training medical teams to work well together. Additional studies indicated that “adverse events were caused by failures of teamwork or judgement,” while “positive outcomes for the team and patient were primarily influenced by good nontechnical skills.”

Among the nontechnical skills, communication is key. Results from a survey of 14 hospitals in British Columbia indicated that while surgeons, anesthesiologists, and nurses communicate well amongst each other, they don’t do as well when trying to communicate to someone outside their own roles. And if surgical team competence is, as Cochrane noted, based on shared knowledge and expectations, effective communication is critical for that sharing to happen.

“Good teams are able to spot when things are going wrong versus when they’ve gone wrong,” said Cochrane. And that can make all the difference between a positive patient outcome and a negative one.

Douglas Cochrane is professor emeritus of the Division of Pediatric Neurosurgery at the University of British Columbia (BC) and BC Patient Safety and Quality Council Chair. He is currently a staff neurosurgeon at the Hospital for Sick Children in Toronto, Canada.