

APRIL 2018

For The Physicians of John Muir Health

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Physician News

CHIEF OF STAFF MESSAGE

The ED Integration Experience



Russell Rodriguez, MD
Chief of Staff, Concord

There is much talk these days about integration. Our administrative leadership has integrated. The nursing directors and supervisors have taken on cross-campus responsibilities. For the first time, all of the non-medical staff portion of the hospitals is functioning as one unit.

When it came time for my group's new contract, the health system asked that we form a single group, cross-campus, and provide coverage to both Emergency Departments. Over the next couple of months we were able to settle on a

leadership structure and begin to make plans for this new endeavor. There have always been differences between our Concord and Walnut Creek hospitals, and although I assumed many of these differences were blown out of proportion, providers at each site had some trepidation about starting to provide service at the opposite campus.

We approached our merger in a stepwise, gradual fashion. We put a transition team together, consisting of providers from each site, as well as a provider who was already working at both. The team tackled a wide range of potential issues and possible roadblocks to ensure that providers had a smooth transition to the new locations.

We are now three months into our merger as one cross-campus group. I am happy to report that thus far, it has been a fairly smooth and successful journey. We have about 30% of our doctors working cross-campus, and expect that number to be over 40% in the next few months. I am working closely with the new cross-campus nursing director to standardize operations, policies, and procedures. We are beginning to take the best practices from each site and implement them across both facilities. Our physician leaders are able to divide and conquer the administrative duties, freeing up more time to provide clinical care or work on department projects that we did not previously have time to pursue.

I have confirmed that many of the supposed differences between the hospitals do not, in fact, exist. I see (and consult) my same colleagues in surgery, cardiology, hospitalist medicine, etc., regardless of the location at which I am providing care. The staff has been welcoming to all of our doctors that are crossing to a new site. Providers find the change in environment and different patient populations to be a refreshing change of pace.

Our Emergency Department is unique in that we are one medical group and one department. For this reason, making this sort of

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SERVICE LINE SPOTLIGHT:

Neurosciences Update 2018

The diagnosis and treatment of brain and spine disorders is an exciting growth area in medicine, and John Muir Health has been in the vanguard of significant developments that improve the ways we can treat our patients. Both hospitals have been designated as Primary Stroke Centers for several years, and in 2017, John Muir Health's Walnut Creek Medical Center was awarded Comprehensive Stroke Certification by The Joint Commission. This recognition puts us in an elite group, the top one percent of hospitals nationwide, for rapid, leading-edge stroke care, and includes advanced imaging, specialized staff and 24/7 accessibility of specialized services.

"We're proud to be able to offer the most advanced techniques and technology to diagnose and treat a wide range of neurological disorders of the brain and spine," says Kacey Hansen, Executive Director, Neurosciences, Trauma, and Regional Transfer Center Services. "Our patients have amazing resources close to home for cerebrovascular diseases, from stroke to aneurysms, and brain and spinal cord tumors, dementia, spine diseases, and neurological disorders." She adds, "Many of the disorders that we treat require team collaboration, and we have an outstanding multi-specialty staff."

The neurosciences staff includes neurologists, neurosurgeons, neuroradiologists, rehabilitation medicine physicians, neuropsychologists, nurses and allied health professionals.

There is much to report in this field. For the latest updates, *JMHPN* turned to three specialists: Ray Stephens, MD, Stroke Medical Director and neurologist, Ira Finch, MD, interventional radiologist, and Max Merkow, MD, neurosurgeon.

JMHPN: What are some recent developments in your department?

Dr. Stephens: In stroke, there are two big advances. As you know, we have recently become a Comprehensive Stroke Center, quite a feat for a community hospital.

Secondly, two big studies published this year have shown dramatic and very positive results of stroke treatment in much longer time windows from onset. DAWN was one of the studies, showing that in selected stroke patients presenting up to 24 hours after onset, removal of a clot by endovascular thrombectomy reduced disability. This study was in fact terminated early, as it showed clear efficacy.

Another study -- DEFUSE 3 -- studied endovascular therapy following imaging evaluation for stroke between six and 16 hours of onset. It also assessed efficacy and safety of thrombectomy in selected patients. This trial was likewise terminated early, as interim analysis showed high likelihood of benefit.

We are proud that John Muir Health was one of a small number of community hospital sites chosen to participate in DEFUSE 3, funded by the National Institute of Neurological Disorders and Stroke (NINDS).

It is gratifying that in these studies, patients did so much better with thrombectomies than with simple medical treatment. It is a big step forward, worldwide -- we can greatly increase the number of patients who can be treated. A big issue with stroke, of course, remains time. Since a stroke patient may be impaired, he or she may not call for help as quickly as, for instance, a heart patient. Historically, it has been a real problem. For example, if a patient woke up with paralysis, he or she would likely not know when it occurred. These new studies tell us that we can keep the treatment window open longer using brain imaging perfusion criteria. It is really important, as stroke is still the #1 cause for permanent disability in the Medicare age population. It can cause devastating outcomes, requiring assisted living, or nursing home care. So it's fantastic that we can now help people we thought we could not.

Dr. Finch: The most significant development in the neurointerventional arena relates to the management of acute strokes. Although we have been performing clot extractions for well over a decade, we now have a better understanding of which patients are most likely to benefit and have greater confidence in the efficacy of the therapy. During the last couple of years, we have seen improvements in the equipment that dramatically reduce case time from one to two hours to under half an hour. Speedier reperfusion also improves outcomes. As a result of the stroke studies mentioned above, we now evaluate patients for possible clot retrieval up to 24 hours after a stroke by means of a special CT study that most hospitals don't offer. This study is very fast, non-invasive except for contrast administration, and measures the amount of dead brain and viable brain at risk from the stroke.

The other major development in our program is the use of flow diverter stents (Pipeline) to treat certain types of brain aneurysms.

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SPOTLIGHT: — cont. from pg. 7

Dr. Merkow: In terms of spine surgery, there is a trend at John Muir Health to offer less invasive procedures. By leveraging new technology combined with clinical fundamentals, we're able to make similar interventions, but to do them more safely and with less disruption of people's lives. For example, a microdiscectomy or decompression for lumbar stenosis can be done through a small tubular retractor as an outpatient procedure. This results in a huge benefit for the patient because it minimizes pain and shortens recovery time. On another note, we've become very experienced with our new interoperative CAT scanner. I'm a big advocate of this technology. We feed images taken during the procedure into a computer program that allows us to be very precise in our interventions. This technology is particularly useful in spine reconstruction and stabilization procedures that treat arthritis, instability, and traumatic injuries. This combination leads to safer surgery and better outcomes.

What do you most wish other JMH MDs knew about your department?

Dr. Merkow: I would actually stress some of the things we've already touched on. My colleagues in other departments should know that the neurosurgeons -- as well as the broader neuroscience community -- incorporate the latest advances into our practices to get the same or better outcomes with less pain and shorter hospital stays. The intraoperative CAT scanner, endoscopy for pituitary tumor removal, deep brain stimulation for Parkinson's Disease and essential tremor, and laser ablation treatment for brain tumors are just a few examples.

I would also want to note how unusual it is for a community hospital to offer the breadth and depth of neuroscience services that we do. We adopt the techniques shown to be most beneficial at the research-heavy universities, but unlike the large university hospitals, we offer them along with the advantages of a community hospital setting.

Dr. Stephens: I want to re-emphasize that even though the time window has enlarged for treating strokes, patients should still always get to the ER as rapidly as possible. They still do even better if they come immediately; numbers are better for early intervention than later. Most people have heard the rule that "time lost = brain lost." It's still the same. With any stroke

warning symptoms, patients should call 911 to be assessed and treated.

What will be most challenging in future?

Dr. Stephens: Going forward, the biggest issue is to fine-tune the information we are getting about treating stroke in a longer time frame. What is the upper limit of time, is it farther than 24 hours? Is there a limit in age, for instance, what about patients over 90? Ultimately, what will the optimal treatment be? These are things still to learn.

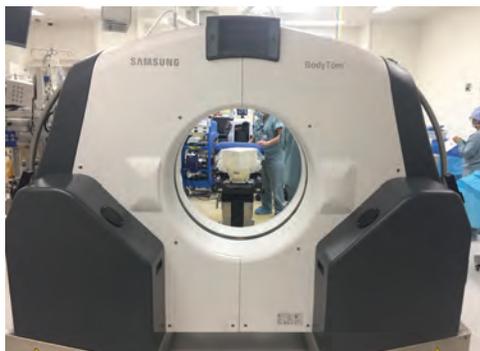
Dr. Merkow: Technology paired with sound clinical fundamentals will always be crucial, both now and in the future. It is imperative that the health system continues to stay modern by investing in the latest equipment and attracting talented physicians. One does not work without the other.

Are there any patient stories you'd like to share?

Dr. Stephens: We've had many patients who have come in with fairly significant deficits, i.e., with a left hemisphere stroke, and weakness or paralysis on the right side of the body, and with difficulties in speech and understanding. In

my first 15 years of practice, there was not much we could do to treat these patients, and they did poorly. The most gratifying thing I've seen in 30 years of practice is this huge change. We're now in a situation where we can dramatically save patients presenting with this set of issues. When we see a patient's imaging showing a loss of blood flow, but no permanent damage, they are considered a good candidate for the clot removal. Afterwards, they have walked out of the hospital with no deficits.

Dr. Merkow: I recently took care of a patient who had suffered a burst fracture of the spine. Although neurologically OK, the pain was so severe that this patient was bedbound even on high dose analgesia. By stabilizing the spine via percutaneous placement of rods and screws -- and without requiring a large incision -- the pain dramatically improved, and the patient left the hospital two days later without the need for narcotics. The procedure also expedited the healing process and prevented the spine from being misshapen long-term. This patient's treatment is a good example of the kind of neurosurgery we're able to practice today, and especially how the intraoperative CAT scan allows us to place devices without tissue dissection.



The surgeon and nurses use the interoperative CAT scanner to enhance visualization and precise placement of instruments.

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Deep Brain Stimulation (DBS) and Laser Thermal Ablation

John Muir Health recently began offering Deep Brain Stimulation, a treatment for patients with the debilitating conditions of Parkinson’s Disease and essential tremor, and who are no longer effectively treated by medication. Dr. Merkow explains that “The effects of medication can wear off, leading the patient’s quality of life to plummet. They are often unable to work or enjoy recreational activities because the tremor has become so severe.” By precisely placing a small device using intraoperative imaging, we are able to apply focused electrical energy that immediately relieves patients’ symptoms. Patients commonly leave the hospital a day or two after the operation.

“This is a collaboration with neurologists, who take care of these patients from the time they are first diagnosed. The neurologist will program the stimulation device in his or her office to reduce the effects of Parkinson’s Disease or essential tremor most effectively. It is important to highlight that this therapy is great for treating the movement problems but does not help the cognitive or memory issues sometimes associated with these conditions.”

Another area of technological advance is called laser thermal ablation. “Brain tumors are a common condition we treat at John Muir Health. It’s a big advantage to have a large, collaborative cadre of radiation oncologists, neuro-oncologists, and other specialists,” adds Dr. Merkow. “Collectively we have a wide variety of therapies that we can offer our patients. In this case, we can use the interoperative CAT scanner to place a laser catheter into a brain tumor, through a small, percutaneous opening in the scalp. We use the laser catheter to heat and destroy the brain tumor and closely monitor this treatment real-time in an MRI. We treat the patient and they can actually leave the next day. This is a substantial advantage for people fighting cancer.”

NEUROSCIENCES: WHAT WE TREAT

- Ateriovenous Malformation
- Brain Aneurysms
- Brain Injury
- Brain and Spinal Tumors
- Intracranial Vascular Stenosis
- Other Neurological Disorders
- Spinal Injury
- Stroke

WHAT WE OFFER

- Interventional Neuroradiology
- Neurology
- Neuroradiology
- Neurorehabilitation
- Neurosurgery
- Stereotactic Radiosurgery (SRS) / Stereotactic Body Radiation Therapy (SBRT)

Stroke; Our Quality Measures (January - June 2017)

Measure	Description	Results
Measure #7 (CSTK7)	How quickly we can remove the clot to treat an ischemic stroke.	Our Result: 113 minutes Benchmark: 106 minutes
Measure #8 (CSTK8)	How often our Neuro-interventional Radiologists can restore full blood flow with clot removal.	Our Result: 100% Benchmark: 84%
Measure #9 (CSTK9)	How long it takes us to start the procedure with skin puncture for clot removal.	Our Result: 39 minutes Benchmark: 81 minutes
Modified Rankin Score 0-2 at 3 months after clot removal procedure. The modified Rankin is a scale used to measure the disability level in daily activities of people who have suffered a stroke.	Patient reporting functional independence ** at 90 days from discharge. ** Independent with bathing, dressing, preparing meals. May not be able to drive or do all previous activities (Working, dancing, playing golf).	Our Results: 2016: 46% 2017 to date: 54%

