10

Vision Loss Due to Herniation of the Optic Chiasm
Neurosurgeons, ENT clinicians collaborate to come up with creative solution
in Clinical Practice Today

4 Engaging in Quality Improvement Efforts
Practices can begin by identifying potential areas for improvement and developing measurable goals

6 Advances in Metabolic Imaging for the Treatment of Head and Neck Cancer
Fused PET/CT imaging can help physicians determine the best course of treatment

7 Medical Assistants: An Affordable Option
Be sure to research your state’s scope of practice laws before hiring a medical assistant

8 Seniors Take Steps Toward Better Surgical Outcomes
Older patients preparing for surgery are encouraged to increase their step counts and overall physical activity

9 Motivational Interviewing: Helping Patients Adopt Healthy Habits
Incorporating motivational interviewing techniques into clinical practice can translate into long-term behavior change

10 Vision Loss Due to Herniation of the Optic Chiasm
Neurosurgeons, ENT clinicians collaborate to come up with creative solution

12 Getting the Most From Your Lunch Break
Taking time to unwind can make you healthier and happier

13 Parathyroid Tissue Cryopreservation Offers Safety Net
Cryopreservation helps surgeons guard against the rare condition of acquired hypoparathyroidism

14 Gastroenterology Enables Patient to Receive Necessary Heart Surgeries
Duke physicians prepare for the possibility of postsurgical decompensation
Duke Welcomes New Chief of Congenital Heart Surgery

In fall 2017, Duke announced the appointment of pediatric cardiovascular surgeon Joseph W. Turek, MD, PhD (pictured right), as the new chief of Congenital Heart Surgery. Most recently a faculty member at the University of Iowa where he led the Congenital Heart Surgery Program, Turek has extensive experience performing the full spectrum of complex neonatal cardiac surgery as well as advanced aortic root operations, such as valve-sparing root replacement, the Ross procedure, and the Nikaidoh operation.

In particular, he has championed a total beating-heart technique for the Norwood operation and beating-heart modified aortic root advancement for infants with aortic arch hypoplasia. He offers minimally invasive approaches for performing atrial septal defect repairs, valve repair/replacement, anomalous coronary operations, and epicardial lead placement.

In addition to his expertise as a clinician, Turek is an accomplished basic and translational science researcher. His research focuses on elucidating the mechanisms responsible for aortopathy and cardiomyopathy in patients with connective tissue diseases such as Marfan syndrome.

Researchers Identify Genetic Drivers of Most Common Form of Lymphoma

An international research effort led by Duke Cancer Institute scientists has helped elucidate the genetic underpinnings of diffuse large B-cell lymphoma (DLBCL) and the potential role these genetic alterations might play in patients’ responses to therapies. The findings were published in *Cell* in October 2017.

Analyzing tumor samples from 1,001 patients with DLBCL, researchers used whole exome sequencing to pinpoint 150 genetic drivers of the disease and tested for correlations between the genetic alterations and how well patients had responded to standard therapies. The team also used clustered regularly interspaced short palindromic repeats (CRISPR) screening to identify functional oncogenes and found several critical genetic links that could help guide treatments.

“We have very good data now to pursue new and existing therapies that might target the genetic mutations we identified,” says Sandeep Dave, MD, a professor of medicine at Duke. “Additionally, these data could be used to develop genetic markers that steer patients to the most effective therapies.”
Engaging in Quality Improvement Efforts

By Meredith Lidard Kleeman

Practices can begin by identifying potential areas for improvement and developing measurable goals.

The Medicare Access and CHIP Reauthorization Act (MACRA) is poised to transform the health care system by paying participating providers based on quality of care. Under MACRA, a percentage of physician payment is based on value, and high-value care is measured by several factors, including quality.

Improvement isn’t just a physician-focused activity, either—everyone working at a practice should be involved in QI efforts. For instance, a medical assistant in Shah’s clinical practice observed that the existing protocol for administering flu shots caused significant delays and, in some cases, resulted in patients leaving because the office was so backed up. Based on that observation, Shah’s clinic changed its flu shot program, and medical staff now administer flu shots before patients see providers.

Create a Culture of Improvement

QI should be part of a practice’s mission, according to Kevin Shah, MD, an internist and the medical director of Primary Care Innovation and Improvement at Duke. “Practices need to look at improvement as their business,” he says.

However, improvement shouldn’t be limited to a single task or project. “If you’re a practicing group and you’re not constantly asking yourself, ‘How do we do it better? How do we evolve to make our care better?’ I think there’s a conversation there about what’s the culture of that practice and how do we change that culture,” Shah notes.

Determine Potential Areas for Improvement

After an organization commits to focusing on QI efforts, the next step is determining potential areas for improvement and developing measurable and time-specific goals.

Jackie Coult, a health care consultant and member of the National Society of Certified Healthcare
Business Consultants, advises physicians to review the established QI measures put forth by the Centers for Medicare & Medicaid Services and their health insurance payers and then select the measures that are appropriate for their goals. “Once [physicians] inventory that, they can identify the [measures] that will actually really help them in their quality outcomes,” Coult says.

Many hospitals and larger medical groups have their own set of quality measures in place. For example, Duke Primary Care has explicit measures for its more than 200 providers, Shah explains. These include a composite of several quality measures for diabetes and coronary disease, as well as breast cancer screening.

Collect and Analyze Data
After identifying QI goals, practices can begin data collection and analysis. According to Shah, it is crucial to determine the kind of data and information to collect and choose a capture method that accurately measures effects on patients and is meaningful to providers.

The American Academy of Family Physicians (AAFP) states that data collection and analysis lie at the heart of QI. In its guide to the basics of QI, the AAFP explains that data can help physicians understand how well systems work, identify potential areas for improvement, set measurable goals, and monitor the effectiveness of change. The guide also notes that it is important to collect baseline data before embarking on a QI project, commit to regular data collection, carefully analyze results at the end of the project, and then make decisions based on that analysis.

However, data capture and storage often pose a workflow issue, and inefficient systems can frustrate health care providers and staff and place an additional burden on an already overworked health care team. Although technology and electronic health records (EHRs) have come a long way, not every EHR vendor includes data collection features to facilitate QI efforts. Outsourcing data collection is one option for physicians, Coult says. Practices with data collection hurdles might find it beneficial to join an accountable care organization or even merge with a larger management organization to handle those concerns, she adds.

Technical issues don’t have to hinder QI efforts, though. If a practice’s goal is to increase mammogram screenings, front-office staff can make outreach calls to patients to schedule mammograms and record the number of scheduled screenings on a paper or electronic spreadsheet.

Analyzing data and making decisions based on that analysis is a skill that all providers should develop in order to keep up with the ever-changing health care industry. “Being able to look at data and then develop systems to improve upon that data—that is quickly becoming the core business of health care,” Shah says.

Communicate Results
Improving patient outcomes is the goal of many QI projects, and it’s important to communicate priorities, actions, and results to staff members and patients. Additionally, take time to acknowledge and celebrate a project’s success, which can boost staff and patient morale. For instance, when Shah and his team were working on improving breast cancer screening rates, patients were impressed that their providers were analyzing data outside of their visits. Patients also appreciated the support they received from Shah’s team during QI efforts focused on reducing hospital readmissions and improving transitions of care.

“We [strive to] practice great medicine, but there’s always room for improvement,” Shah says. “I think most physicians would agree with that, and actually being able to look at your own data and ask, ‘How much improvement can be made?’ is a really important and critical piece of information.”
Advances in Metabolic Imaging for the Treatment of Head and Neck Cancer

By Lori Malone

Positron emission tomography (PET) and computed tomography (CT) scans are frequently used to diagnose a variety of cancers, including head and neck cancer. In particular, the imaging techniques are used to detect tumors in the mouth, throat, larynx, sinuses, lymph nodes, salivary glands, and thyroid gland. Duke oncologists are combining PET and CT scans to improve diagnostic accuracy, predict the outcome of a planned course of treatment, and, eventually, personalize treatment strategies for head and neck cancers.

Walter Lee, MD, MHS, a head and neck surgeon and co-director of the Head and Neck Cancer Program at the Duke Cancer Institute (DCI), explains the benefits of combining the scans: “A CT scan will show a mass, and the PET scan will show if it is metabolically active. Relying on a negative CT scan alone could lead us to think there’s no cancer in a normal-sized lymph node, but a PET scan could indicate the node is metabolically active, thus helping to better direct our diagnosis and treatment for the patient.”

Metabolic imaging is also being used for patients who have been treated with surgery and postoperative chemoradiation therapy but are at high risk of cancer recurrence. If findings on a PET scan are negative after 3 months of treatment, physicians can be confident that the patient had a complete and durable response; if the scan shows signs of persistent activity, clinicians can develop a new course of action to quickly determine whether it is due to treatment side effects or persistent cancer.

Looking at future advancements in the use of metabolic imaging, Lee notes that Duke physicians are currently investigating how PET scans can help clinicians model and personalize treatments during the early stages of cancer. “Radiation treatments are typically 6 to 7 weeks long, but if we can perform a repeat PET scan after just 1 to 2 weeks, it could inform us very early to modify or reduce treatment plans based on the tumor’s response.”

Another advantage for patients is the DCI’s multidisciplinary tumor board, comprising a team of experts that includes surgeons, medical and radiation oncologists, neuroradiologists, and pathologists. As a team, they review the patient’s history, including images. “When patients are referred to Duke, they have a whole team of dedicated specialists and a whole package of advanced treatments standing behind them,” says Lee. (Contrast-enhanced CT above shows extensive squamous cell cancer of the larynx.)
As demand for advanced practice providers continues to exceed supply in the labor market, many practices are increasingly turning to medical assistants (MAs) to fill workforce gaps. Although MAs offer the advantage of affordability, their more limited scope of practice presents its own set of challenges.

Unlike almost all other medical support staff, MAs are not required to be certified, and historically they usually were not, according to Debra Phairas, president of a San Francisco–based health care consulting firm. But lately the trend has been toward certification, particularly since the “meaningful use” law required certification for data entry employees—a development that surprised many practices.

The MA profession occupies a sort of legal gray area between medical and nonmedical personnel. Each state has its own laws regarding scope of practice, usually laid out by its medical association and accessible via the internet, Phairas says. In addition to the full range of front-desk clerical duties, MAs might perform diagnostic tests and laboratory services, maintain health records, explain treatments, and provide health coaching.

Salaries for certified MAs tend to be higher but are still well below those of nurses and physician assistants, often by as much as $20 to $30 per hour, according to Phairas. She suggests a thrifty strategy for hiring certified MAs: offer 3-month internships to nearby accredited institutions.

“You get to see if that person is a good fit with your practice,” she explains. “Since internships usually happen at the end of a training program, you can then offer to make that intern an employee.”

One pitfall to watch out for is overtime laws. Most states deem MAs nonexempt, hourly wage workers entitled to overtime pay. Many practices make the mistake of paying MAs a flat salary and then asking them to stay by the physician’s side for the typically long clinician workday. This puts the practice at risk of lawsuits by former employees seeking back pay, Phairas warns. The only exception would be if the MA were a supervisor and spent more than 50% of his or her time performing managerial duties, she says.

As valuable as MAs are, many tasks fall outside their purview. For example, most cannot administer intravenous injections. “That’s why practices really need to be up-to-date on their state’s scope of practice [laws],” Phairas explains.
Older patients preparing for surgery are receiving step trackers and encouragement to exercise as part of a coordinated effort by Duke geriatricians and researchers who study aging to improve surgical outcomes for seniors.

The prehabilitation program is part of the Perioperative Optimization of Senior Health (POSH), an initiative Duke launched in 2011. The presurgery exercise project, known as POSH-fit, focuses on patients older than 65 years who are scheduled for surgery but are not currently exercising. Candidates are considered to have an increased risk of slower postsurgery recovery on the basis of age, health status, current medications, and physical function. Participants are limited to those scheduled for general surgical procedures and spine surgery. Patients undergoing cardiac surgery are not included.

Patients who receive trackers as part of POSH-fit are encouraged to increase their step counts and overall physical activity in the weeks preceding their surgery.

The trackers provide hard metrics on step counts, offering clinicians an opportunity to observe participants making progress day by day, says Miriam C. Morey, PhD, a professor of medicine in the Division of Geriatrics and co-director of Duke’s Claude D. Pepper Older Americans Independence Center. Morey is also a senior fellow at the Center for the Study of Aging and Human Development. “We believe we are empowering patients to take positive ‘steps’ toward improving their chances of a positive recovery from surgery,” she adds.

The evidence suggests that patients are better prepared for surgery when they use trackers in conjunction with counseling and encouragement from the POSH-fit team, Morey says. Using the trackers without counseling improves fitness, but to a lesser degree.

“The data are beginning to come together to allow us to correlate step counts with hospital length-of-stay and point of discharge, whether in a rehabilitation center or at home,” Morey says. “We are interested in learning whether low baseline step count is a predictor of poor outcomes and whether a change in step counts before surgery might be an indicator of recovery potential.”

This initiative syncs with a goal established by the Duke Center for Geriatric Surgery and the Duke Center for the Study of Aging and Human Development to improve resilience among seniors.
Motivational Interviewing: Helping Patients Adopt Healthy Habits

By Emily Paulsen

With chronic disease on the rise, physicians have more reasons than ever to help patients adopt healthy habits that can lead to better health outcomes. But simply telling patients to change their behavior rarely has lasting effects, says Lawrence Greenblatt, MD, an internist at the Duke Outpatient Clinic and professor of medicine in the Duke Department of Community and Family Medicine. Greenblatt says he finds the motivational interviewing technique to be more effective. The technique involves using open-ended questions to help patients discover their own reasons and solutions for changing health behaviors, explains Krista Hirschmann, PhD, a faculty member of the Academy of Communication in Healthcare and contributor to the Academy’s new book, Communication Rx: Transforming Healthcare Through Relationship-Centered Communication. This process is more likely to translate into long-term behavior change.

Benefits for many patient populations. Motivational interviewing was first used in the drug and alcohol rehabilitation fields, but it’s applicable to any type of behavior change. A growing body of evidence suggests it is effective in improving weight control, cholesterol levels, and medication adherence, for instance.

Currently, the technique is used most often with patients who have multiple chronic conditions, but other patients can also benefit from this type of approach, Hirschmann says. Both she and Greenblatt would like to see more physicians integrate the technique into their practices. “Done right, motivational interviewing takes no more time than traditional advice giving,” Greenblatt notes.

Shortcut approach. Greenblatt uses a shortcut version of motivational interviewing that can fit easily into a typical clinical encounter. In fact, he often starts the conversation with the patient, and then another trained staff member continues working with him or her. Greenblatt first asks patients to rate on a scale of 1 to 7 how important they believe the desired change would be to their health. He then explores their rating, giving them the opportunity to find their own reasons for change. “You want to keep it positive,” he cautions.

Next, he asks patients to rate how confident they are in making the change. If their confidence is on the lower side, he asks them what could increase it. This prompts patients to brainstorm solutions, which are more likely to work because the patient has suggested them.

Hirschmann acknowledges that the approach may seem counterintuitive at first—just telling people what to do may seem like enough, especially when their health is at stake. She encourages doctors to use a little motivational interviewing on themselves, asking, “What would prompt me to change my interviewing behavior?” Just like patients, physicians tend to do what’s familiar, she says. But those who try it build confidence as they see results.
After reporting bitemporal hemianopsia, a 48-year-old man was diagnosed with a large prolactinoma. The tumor was successfully treated with cabergoline, but 5 years later, the patient noticed his vision once again starting to collapse, indicating the possibility that the tumor had returned and was no longer controllable with medication. The patient emailed the multidisciplinary pituitary tumor clinic at Duke.

Magnetic resonance imaging (MRI) performed at Duke failed to reveal the presence of a pituitary tumor recurrence. Rather, in the absence of the prolactinoma, the optic chiasm had herniated into the pituitary sella (Figure 1), causing traction on the optic apparatus that had resulted in a progressive loss of peripheral vision (Figure 2).

The location of the optic chiasm made it risky to manipulate, explains Duke neurosurgeon Patrick Codd, MD, who specializes in endoscopic and minimally invasive neurosurgical techniques. On the one hand, using an endoscopic approach to elevate the optic chiasm directly risks injury to the pituitary, which would cause significant harm to the endocrine system. On the other hand, using a supraorbital keyhole approach risks injury to the delicate structures in the brain.

Ultimately, Codd and Duke endoscopic sinus and skull base surgeon David Jang, MD, decided that the best method would be to use an endoscopic approach to elevate the entire dura lining the sella turcica to release the pressure on the optic nerve. The plan would be for Jang, an expert in nasal anatomy and endoscopy, to help Codd access the sellae in order to perform the chiasm elevation under direct endoscopic guidance without violating the dura.

“Although most patients with large prolactinomas need lifelong suppressive medication therapy, for those who can tolerate it well like him, this usually has minimal impact on their life.”
The next challenge was identifying an appropriate material to prop up the sellar dura. The team discussed several artificial materials before Jang proposed the idea of using a collagen-based biomaterial. The benefit of using such a material, Jang explains, is that, unlike other materials, the biomaterial can integrate into the surrounding tissue, and the mucosa can grow over it.

To minimize the risk of injury to the optic nerve, Codd and Jang enlisted the aid of a neuromonitoring team to visualize the patient’s optic nerve and visual cortex. During the surgery, the team would track the patient’s visual pathway and monitor changes in vision.

The surgery was successful (Figure 3), and the patient was discharged the next day. Within 6 months, the patient regained much of his peripheral vision, without loss of pituitary function (Figure 4). Codd does not anticipate that he will have any further problems: “Although most patients with large prolactinomas need lifelong suppressive medication therapy, for those who can tolerate it well like him, this usually has minimal impact on their life. And his vision has significantly improved in what seems to be a durable recovery.” (Fundus photograph on the previous page shows the optic nerve in a different patient.)

---

**Figure 1.** MRI revealing herniation of optic chiasm.

**Figure 2.** Patient’s visual field.

**Figure 3.** MRI demonstrating that optic chiasm was successfully elevated.

**Figure 4.** Patient’s visual field following surgery.
The average doctor works about 12 hours a day. Thus, rather than “doing lunch,” most doctors spend this prime time completing morning charts and other paperwork or answering staff questions about their patients. However, not only is it important to eat during your lunch break, but it’s also crucial to take time to unwind.

“Get moving.” If taking a gym break isn’t an option, try spending part of your break outside and in the sun, which can help clear the head and boost mood and energy levels. If getting outside is a challenge, try workspace yoga.

Try guided relaxation. Also known as guided imagery or guided meditation, guided relaxation entails focusing on words and images to help you calm, recharge, and refocus your day. Available apps offer various guided relaxation options, from brief to longer sessions. Among the most popular are Sattva, Calm, and Headspace.

“You should be as strategic about your lunch hour as you are about your day in general,” says American Medical Association Past-President Steven J. Sack, MD. Committing to taking time in the middle of the workday to refuel can make you a better doctor and a healthier and happier person.
Duke endocrine surgeons who perform high-risk parathyroidectomies are now offering patients the option of preserving some portion of the resected parathyroid tissue as a back-up treatment plan in the unlikely but devastating event that they have no working parathyroid tissue left.

Although cryopreservation of parathyroid tissue has been performed for years, it is offered only by certain medical centers using advanced cryobanks to help surgeons guard against the rare condition of acquired hypoparathyroidism. The cryopreserved tissue can be autotransplanted, typically in the forearm, if the patients are tested and remain in a hypoparathyroid state. Duke’s Robertson Clinical and Translational Cell Therapy Program serves as the repository for preserved tissue.

The risk of permanent hypocalcemia following a remedial neck operation can be as high as 30% because of the challenges of determining the viability of the remaining parathyroid glands. Cryopreservation is typically recommended in reoperative cases for primary hyperparathyroidism and in patients with 4-gland hyperplasia who are at risk of having too little functional parathyroid tissue left behind.

“For patients facing a redo surgery, cryopreservation is a great strategy—a back-up plan that is reassuring to the patient,” says Julie A. Sosa, MD, a surgeon and the leader of the Endocrine Neoplasia Research Group in the Duke Cancer Institute.

Sosa, who helped launch the cryopreservation initiative at Duke 4 years ago, says remedial parathyroid surgeries represent 25% to 30% of overall surgeries performed at her practice. The most common presentation is primary hyperparathyroidism. Tissue preservation is also offered to patients with multiple endocrine neoplasia type 1 (MEN1).

“Patients with MEN1-associated hyperparathyroidism present very young—in their 20s, 30s, or 40s—so they are going to live another 3 to 4 decades,” Sosa says. “There’s a good chance the disease will slowly reoccur over time, so tissue preservation offers a safety net that makes sense for most patients.”

The overall number of cryopreservation cases remains relatively low because special handling and storing is necessary, Sosa says, but the practice is becoming more common. She has preserved tissue from 10 surgeries during the past 4 years, and she has autotransplanted 2 of the preserved samples. Other Duke endocrine surgeons who offer tissue preservation include Sanziana A. Roman, MD, Randall P. Scheri, MD, and Michael T. Stang, MD. (Light micrograph above shows a parathyroid gland.)
Short of breath, unable to lie down, and experiencing abdominal pain from ascites, a 66-year-old woman from Ohio with chronic myeloid leukemia was diagnosed with advanced heart failure. She would require angioplasty and mitral valve replacement surgery. However, she also had Child-Pugh class B cirrhosis, making the heart surgeries too risky for the team that had been managing her heart failure to perform.

The patient began researching medical centers. Her cardiologist recommended she consult with a team of specialists at Duke to discuss a potential plan for surgery.

When the patient first arrived at Duke, her liver disease did not meet the criteria for transplantation, explains Matthew Kappus, MD, a Duke gastroenterologist and transplant hepatologist. However, given the risks associated with heart surgery in patients like this, he and his team wanted to be prepared.

Working in close partnership with the patient, a multidisciplinary team comprising physicians from Duke Gastroenterology, Transplant Hepatology, Cardiology, and Cardiovascular and Thoracic Surgery developed a plan: Before undergoing cardiac surgery, she would be evaluated for liver transplantation to prepare for the possibility of postsurgical decompensation of her liver disease.

“We guided her through evaluation for liver transplantation so as to create a safety net for her after heart surgery.”

“To prepare, we guided her through evaluation for liver transplantation so as to create a safety net for her after heart surgery in the very possible event of hepatic decompensation,” Kappus says. “She needed to meet our entire team and fully understand the risks and possibilities associated with pursuing surgery in the setting of advanced liver disease.”

The consultations went well, and the patient elected to undergo her heart surgeries at Duke. In the meantime, the liver transplant team discussed
her case and stayed in constant communication with the cardiovascular and thoracic surgery team. They recommended that the patient stay in North Carolina following heart surgery to allow for frequent hepatology follow-up.

Not unexpectedly, the patient’s recovery was slow, and, in the 2 months following the surgeries, her liver disease decompensated, and her ascites worsened. Her synthetic liver function deteriorated, and the team agreed that it would be best to proceed with liver transplantation listing.

Before performing the transplant, Kappus worked with the patient’s medical oncologist in Ohio to establish a medical plan that would allow her to continue to undergo treatment for leukemia in the context of the immunosuppression she would need post-transplant.

The liver transplantation was successful, and the patient’s liver disease and related sequelae quickly resolved. The patient now comes in for monthly follow-up, and the Duke Liver Transplant, Medical Oncology, and Cardiology teams continue to coordinate care with the patient’s local specialists in Ohio.

“This case really highlights our commitment to delivering the best possible care for each individual. We worked with other centers to help her achieve the best possible outcome.”

To learn more or to refer a patient, call 844-790-2013

[Image: Donor liver being transplanted into a different patient.]

“Light micrograph of liver tissue on the previous page shows cirrhosis.”

“...her family. She’s a fighter.”

February 2018  ClinicalPracticeToday.com
Don’t miss out—tell us what you think!

We hope you enjoy your complimentary subscription to Clinical Practice Today. We strive to bring you useful and interesting practice management tips, case studies, and news briefs to help improve patient outcomes. Do you have comments, suggestions, or ideas for future issues? If so, we’d love to hear from you!

Please give us your feedback at ClinicalPracticeToday.com/survey.

This survey should take less than 5 minutes, and, after you complete it, you will be entered into a drawing to win one of two $500 Amazon gift cards.

Survey responses are due by February 28, 2018, and the two prize winners will be notified via email.

Thank you in advance for your participation. We rely on and value your input.

5 minutes could win you $500!