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Using Big Data for Big Research: MPOG, NACOR and other Anesthesia Registries

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Introduction

A silent revolution is under way in anesthesiology, one that will have a lasting impact on our patients and our practice. I refer to the research potential of 'big data' in anesthesiology, driven by the rapid uptake of Information Age technology in our offices, clinics and hospitals. Electronic healthcare records (EHRs) are changing the way we care for patients, the way we document and bill, and how we understand our practice. In the long run they will do much more: they will provide a fundamental ability to link clinical decision-making in the operating room with patient outcomes in a way that lets us learn from every patient encounter.

This article will provide a brief overview of existing large datasets describing anesthesia patients, procedures and outcomes. I will review their current contents and structure, their future

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Another Year of Changes Lies Ahead for Anesthesiologists

As we enter 2014, we expect to see the term "Big Data" become increasingly familiar. Wikipedia defines Big Data as the "collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications" and notes that "The trend to larger data sets is due to the additional information derivable from analysis of a single large set of related data, as compared to separate smaller sets with the same total amount of data, allowing correlations to be found to 'spot business trends, determine quality of research, prevent diseases, link legal citations, combat crime, and determine real-time roadway traffic conditions.' [Citations omitted]."

In healthcare, the value of large data sets for clinical research and for prevention of disease is clear. The Multicenter Perioperative Outcomes Group registry and the National Anesthesia Clinical Outcomes Registry noted in Dr. Richard Dutton's article, *Using Big Data for Big Research: MPOG, NACOR and other Anesthesia Registries,* are exciting tools for anesthesia researchers.

Another important concept in our thinking is "disruptive innovation," to which Dr. Michael Hicks introduced us in his article *Disruption and the Theory of the Anesthesia Business* a year ago, in the Winter 2013 issue of the Communiqué. Dr. William Hass—a first-time contributor here—takes the concept and applies it to anesthesia services in ambulatory surgical centers in *Disruptive Change, Anesthesiologists, and ASCs.* ASCs are particularly fertile incubators for disruptive change, according to Dr. Hass, because they are more cost-sensitive than other facilities and because their lower-acuity cases offer opportunities for staffing and technological innovations. Combining the cost pressures to which ASCs are so sensitive with the fact that personnel is the greatest expenditure in anesthesia, Dr. Hass predicts that we are going to see combinations of anesthesia professionals and clinical technology that are far different from today's models. He is right.

One key facet of ambulatory anesthesia practice that is changing rapidly right now is the shift of certain high-acuity cases to the ASC setting, which Laura Miller of Becker's ASC Review discusses in her article *Performing High Acuity Cases in ASCs: The Anesthesiologist's Role***.** The ability of anesthesiologists to manage patients' postoperative pain through nerve blocks is the deciding factor in many cases. The practicing anesthesiologists interviewed by Ms. Miller also point to the specialty's role in managing the team that brings the appropriate patients to the ASC, keeps them on schedule and discharges them suitably educated about what to expect during recovery.

We have been expecting disruption, if not necessarily innovation, in the market for anesthesia services for endoscopy for better than a decade. ABC Vice President Jody Locke examines the reality through the combined data of 26 practices across the country in *Endoscopy: Revisited* and concludes that where the revenue yield per case, combined with the productivity of the facility, makes anesthesia for endoscopy profitable, the service is still a valuable line of business. And that is the situation for many practices across the country. Monitoring volume, payer mix and payer policies, accounts receivable and productivity by site will tell each practice whether and when it is time to revisit providing anesthesia for endoscopy.

Some of the changes on which we focus in this issue of the Communiqué are annual rather than epochal. Coding expert Kelly Dennis provides a comprehensive review of a major recurring—and evolving—topic in *Reporting Postoperative Pain Management in 2014.* ABC Vice President Joette Derricks brings us up to date on coding and payment developments in *2014 CPT Coding and Key Reimbursement Changes.*

We hope that all of the information will help ensure a successful year for all of our valued readers.

With best wishes,

Tony Mira
President and CEO

Disruptive Change, Anesthesiologists, and ASCs

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The current upheaval in the business of anesthesia has been previously reviewed in various issues of the Communiqué. While complex forces are involved in these changes, one aspect of practice management is vitally important for both individual anesthesia professionals and their anesthesia services: disruptive change.[1]

Disruptive innovation occurs when processes are improved and adopters of these new processes have operational and financial advantages over their competitors. Disruptive innovation is most likely to start in service niches rather than engulf an entire industry. Anesthesia professionals in ambulatory surgery centers (ASCs) are most likely to undergo disruptive innovation.

Why will these changes occur in ASCs?

- With increasing out-of-pocket expenses, patients are going to be more cost conscious than ever before.
- Demands from patients, referral sources, and insurers will require ASCs to provide high quality services at the lowest possible costs to survive.
- ASCs are fertile ground for disruptive change because their lower acuity cases and healthier patients offer opportunities for staffing and technological innovations.

In case you haven't noticed, your patients, potential patients, your referring physicians, and facility administrators are already shopping for lower price services…. including anesthesia services. ASC services are in the crosshairs of this new reality.

So, what's the disruptive innovation in ASC anesthesia services going to be? Given that staff expense is the largest expense in anesthesia services, change will almost certainly be focused in this area. Will there be a chain reaction where more expensive anesthesia professionals are replaced by those less expensive who are then in turn replaced by technology and even less expensive ancillary staff? More simply, is the plan to replace expensive anesthesiologists with less expensive anesthesia professionals who are then replaced by robots, other technology, or maybe even trained amateurs? Don't for a second think that someone hasn't thought of this already.

The viability and utility of anesthesia services provided with a combination of anesthesia professionals has been proven over time. These combined services constitute the majority of anesthesia services in the United States and this format is growing. Fortunately, the concept has survived despite some extraordinarily poor implementations in:

- Anesthesia Care Teams (ACTs),
- Collaborative practices and variants,
- Anesthesiologist-only practices, and
- CRNA-only practices

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[1] Hicks MR. Disruption and the Theory of the Anesthesia Business. The Communiqué (Winter 2013). http://www.anesthesiallc.com/component/content/article/45-winter-2013/582-disruption-and-the-theory-of-the-anesthesia-business, accessed January 3, 2014.

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development, and their long-term potential for comparative effectiveness and health services delivery research.

Existing Anesthesia Registries

Table 1 lists several sources for big data in anesthesia. Two large datasets supported by the federal government include information about anesthesia care. These are the National Inpatient Sample (NIS) and the Centers for Medicare and Medicaid Services (CMS) 5% and 100% data files. Both of these are populated with administrative data, generated to support Part A (hospital) and Part B (provider) billing, and then aggregated by government payers. The NIS is a statistically-balanced database constructed from information submitted by hospitals to state health agencies, and then passed to the Agency for Healthcare Research and Quality (AHRQ). NIS includes information about hospital

inpatients, including those who undergo surgery. NIS is especially useful for looking at gross outcomes (in-hospital mortality, length of stay) and overall patient characteristics (age, sex, co-morbidities). NIS includes International Classification of Diseases, 9th Edition (ICD-9) information for each patient. In theory this includes a number of codes for postoperative complications, but in practice the accuracy of this data is questionable. Different hospitals in different states have widely differing incentives for finding this information in their medical records and reporting it accurately. Some hospitals have incentives for caring for sicker patients, and therefore seek out and document co-morbidities more aggressively than those hospitals which do not; further, some complications are now associated with payment withholds or penalties, leading to an incentive to *not* find them, or to code them in other ways.

The CMS datasets are derived from clinical encounters submitted as claims for payment by facilities and providers, both inpatient and outpatient, and have some of the same shortcomings as the NIS. CMS data are also heavily skewed towards older patients, because of the eligibility requirements of Medicare. These data include both inpatient and outpatient surgical procedures and anesthetics. The 5% sample is readily available for anesthesia researchers, but includes no identifying information about each case, making it impossible to link records for the same patient for an anesthesiologist, a CRNA and a hospital. The 100% data are more comprehensive, but harder to gain access to. There is no anesthesia-specific information in the CMS data, other than the code of the procedure performed, and no information on long-term outcomes.

Administrative data are also available from several private insurance companies and aggregating agencies such as Premier. These datasets are strong in information on resource utilization, but less useful for assessing the specifics of clinical care. While the Premier database accurately reflects charges for medications used, for example, it can shed little light on why specific medications are chosen.

TABLE 1

Data Set	Types of Data	Address
National Inpatient Sample	Administrative	http://www.hcup-us.ahrq.gov/nisoverview.jsp
Centers for Medicare and Medicaid Services	Administrative	www.cms.gov
Premier, Inc.	Administrative	www.premierinc.com
Multicenter Perioperative Outcomes Group	Clinical	www.mpog.med.umich.edu
National Anesthesia Clinical Outcomes Registry	Administrative, Clinical, Quality Capture, Patient Satisfaction	www.aqihq.org
Society for Ambulatory Anesthesia-Clinical Outcomes Registry	Clinical, Quality Capture	www.scordata.org
Pediatric Regional Anesthesia Network	Clinical, Quality Capture	www.pedsanesthesia.org
Malignant Hyperthermia Association of the United States Registry	Clinical, Quality Capture	www.mhaus.org
Society for Thoracic Surgery Cardiac Anesthesia Module	Clinical, Quality Capture	http://www.sts.org/sts-national-database/anesthesiology-module

More specific to the practice of anesthesiology is the registry of the Multicenter Perioperative Outcomes Group (MPOG), built primarily to facilitate anesthesia research.[1] MPOG is a collaborative effort of more than three dozen academic anesthesia departments, coordinated by the University of Michigan. The MPOG investigators developed a common format for capturing clinical information from Anesthesia Information Management Systems (AIMS), and they are working with their information technology vendors to map AIMS data and transmit it to the MPOG registry. To date, MPOG is collecting every-case data from about a dozen of the participating departments, representing five of the ten different AIMS commonly used in the United States. Efforts are underway to build reports in the remaining AIMS, so that within a few years any hospital with an AIMS will be able to contribute to MPOG. Data in MPOG are highly granular for the anesthetic encounter, capturing information on anesthesia procedures, medications, fluids, monitors and vital signs for every patient the department cares for. Any academic physician in any MPOG participant practice can apply to the Data Use Committee for permission to analyze the aggregated data.

Similar to MPOG, but including additional data from anesthesia billing systems and quality capture software, is the National Anesthesia Clinical Outcomes Registry (NACOR), developed and maintained by the non-profit Anesthesia Quality Institute (AQI).[2,3] This organization was founded by the American Society of Anesthesiologists (ASA) to improve the quality of anesthesia practice throughout the United States. Like MPOG, NACOR collects data by direct transmission of digital information; in fact, NACOR uses the same formats developed by MPOG for collecting data from AIMS. Unlike MPOG, NACOR begins by harvesting information from anesthesia billing systems, which use relatively simple formats to capture basic data from every case. Participation in NACOR is open to any anesthesia practice in the United States, whether they have started using an AIMS or not. The purpose of NACOR is to provide local feedback to the anesthesia practice for regulatory compliance and quality improvement. NACOR is the largest specialty-specific registry in anesthesia, including data from more than 2,100 facilities, 20,000 providers and 250 practices (see Figure 1). Although not primarily intended for research, the AQI does publish a Participant User File (PUF) from NACOR each quarter, presenting a de-identified aggregate dataset for the use of academic researchers in AQI-participant practices. The most recent version of the PUF includes more than 13,000,000 cases collected in NACOR between January 1, 2010 and September 30, 2013. The NACOR PUF is heterogeneous in the data presented; all cases have billing information, about a quarter have quality outcome information (usually gathered at the time of PACU discharge) and only about 10% have detailed information from an AIMS. Because of its size and its national reach, NACOR is a good choice for descriptions of anesthesia practice in the U.S., and can serve as the backdrop for studies using more granular information collected at a single institution.

There are also a number of subspecialty registries available for specific niche practices in anesthesia. Largest is the Society for Ambulatory Anesthesia Clinical Outcomes Registry (SAMBA-SCOR), which focuses on process and outcomes in outpatient surgery. SAMBA-SCOR shares data with

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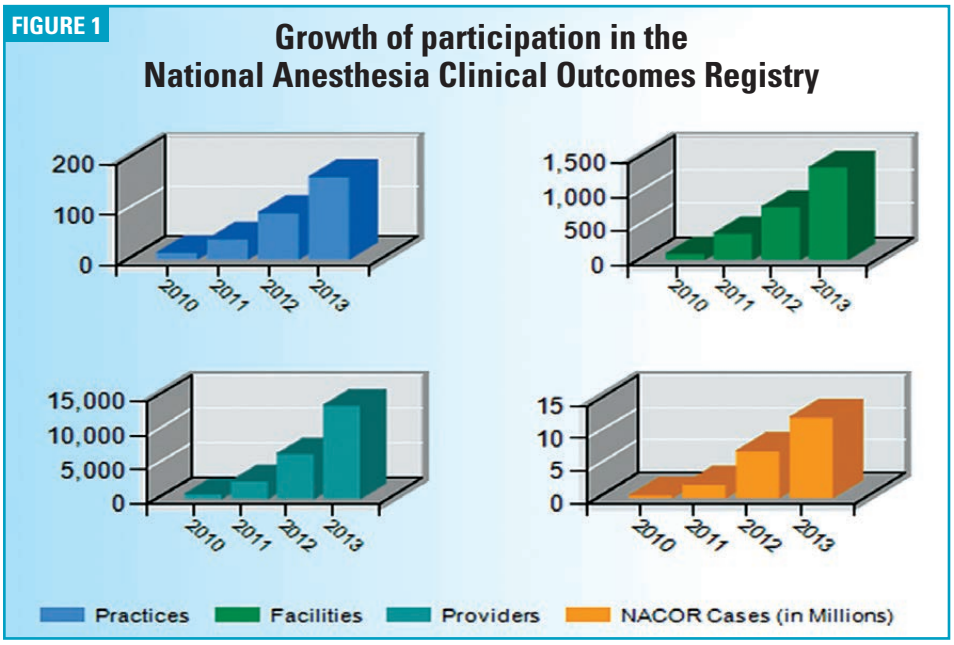

[1] Kheterpal S, Healy D, Aziz MF, Shanks AM, Freundlich RE, Linton F, Martin LD, Linton J, Epps JL, Fernandez-Bustamante A, Jameson LC, Tremper T, Tremper KK; on behalf of the Multicenter Perioperative Outcomes Group (MPOG) Perioperative Clinical Research Committee. Incidence, Predictors, and Outcome of Difficult Mask Ventilation Combined with Difficult Laryngoscopy: A Report from the Multicenter Perioperative Outcomes Group. Anesthesiology. 2013 Sep 25. [Epub ahead of print]

[2] Dutton RP, Dukatz A. Quality improvement using automated data sources: the anesthesia quality institute. Anesthesiol Clin. 2011 29(3):439-54.

[3] Grissom TE, DuKatz A, Kordylewski H, Dutton RP. Bring out your data: The evolution of the National Anesthesia Clinical Outcomes Registry. International Journal of Computational Models and Algorithms in Medicine, 2011; 2: 51-69.

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both MPOG and NACOR. All three registries use identical data formats, such that the same output files can be used for submitting data to all three. Other subspecialty registries include the Pediatric Regional Anesthesia Network database, the registry of the Malignant Hyperthermia Association of the United States, and the newly-launched anesthesia component of the Society for Thoracic Surgery national cardiac surgery registry. Each of these projects gathers granular information about a specific subset of anesthesia patients, and each is intended primarily for scientific research.

Future Developments

Although created by different stakeholders for different purposes, all databases containing anesthesia information face common challenges in recruiting participants, defining data elements, collecting case-by-case information, and analyzing and reporting the results. Older surgical registries have relied on an "eyeballs" methodology, in which a professional abstractor reviews medical records for specific pieces of information. This model generates good data in a consistent fashion, but it is expensive for the hospital to support and thus limited in the number of cases, patients and data elements that can be included. Modern registries, built to take advantage of the increasing use of EHR systems, are all seeking to have data move directly from the medical record to the registry, without requiring human abstraction. The difficulty with this model is the heterogeneity of electronic data today. Some elements, such as vital signs and medication doses, are relatively standard from one system to another, but other elements, such as outcomes and complications, are lacking in consistent definitions across practices and software vendors. In 2013 MPOG and the AQI combined to sponsor a conference on common measures and common definitions in anesthesia electronic records. The first DefCon included two dozen anesthesia quality management experts working with an equal number of EHR vendors to produce consensus definitions of key elements of the anesthesia record. Published on the AQI website, these definitions are serving to unify data for anesthesia research and quality management.[4]

Another goal for the future is to move from self-reported outcomes, which require the active participation of the clinician, to measures that can be passively calculated from the medical record. Hemodynamic instability, for example, will be calculated from the vital signs in the OR and PACU, as captured by the AIMS, rather than by subjective assessment of the provider. An exception to this principle, but still a necessary step for the future, will be increasing collection of outcomes reported by anesthesia patients. Such measures as adequacy of pain management, respect for privacy, quality of communication, and overall satisfaction with anesthesia care can only be gathered from the patient's perspective. Several commercial systems have been launched to gather this kind of data, using tools such as automated voice-response systems, email, and text messaging. Data gathered in this fashion can be linked directly to digital information in the billing system or EHR, and can be transmitted automatically to registries such as NACOR.

Healthcare reform at the national level will drive an increasing need for 'shared accountability' measures, which assess overall outcomes from an entire process of care. Rather than reporting on specific processes at the individual level—such as the timely administration of perioperative antibiotics—shared accountability measures will look at meaningful outcomes such as mortality, major morbidity and hospital length of stay at the level of the entire perioperative team. Anesthesiologists, surgeons and hospitals will work together to define these measures and collect the necessary data. Large registries such as NACOR are an obvious source for parts of the data, especially if granular anesthesia process information can be combined with long-term outcomes collected in existing surgical registries. Linkage of data from one system to another will depend on accurate patient identification (while still protecting patient confidentiality) and common definitions of cases and risk factors. Shared accountability measures will be required for public reporting

[4] http://www.aqihq.org/qualitymeasurementtools.aspx

on the effectiveness of new healthcare organization and payment mechanisms, such as the perioperative surgical home.

There is also an opportunity to combine structured data in the medical record with narrative data about specific cases and events. An example would be a future state in which the anesthesia provider completes a quality capture form at the end of every case, indicating the absence of any major adverse event. In the rare case in which something unusual or unexpected happens, the EHR would shunt the reporter directly to an online incident report form that requests a narrative description of the event. This electronic data would be kept separate from the medical record, but would be available for local quality and risk management purposes, and for automatic transmission to national aggregators such as NACOR. The AQI is pioneering this approach in a few practices today, and is looking for other vendors and groups to work with. *[Ed. – ABC is discussing with the AQI methods to include a narrative incident report feature in our EHR technology.]*

Turning Big Data into Scientific Research

However the data are collected, the major challenge for any anesthesia registry is analysis and reporting. Clinicians are busy and distracted on a daily basis, and are bombarded with administrative and educational products. To effectively turn data into information, registries must find ways to creatively analyze what they collect and intuitively present it to their stakeholders. One mechanism for doing this is through publication of scientific papers. Journal articles maintain a consistent level of quality through peer review, are familiar to all physicians, reach a large audience both inside and outside the specialty, and are preserved for future reference through the National Library of

Medicine. Writing scientific papers can be 'crowd-sourced' by providing access to the data to a large cadre of volunteer researchers. This model is being followed by both MPOG and the AQI, who make their data available with minimal barriers to any anesthesiologist at a participating institution. On a larger scale, this is also the model followed by the federal government with CMS data and the National Inpatient Sample.

Availability to researchers of Big Data from national-level registries is rapidly spawning a new breed of clinical scientist with skills in medical informatics, epidemiology and complex statistical methodologies. New grant mechanisms are arising to support these scientists, with funding from AHRQ, the Patient Centered Outcomes Research Institute (PCORI) and organizations within our own specialty. Both the Foundation for Anesthesia Education and Research and the Anesthesia Patient Safety Foundation now offer funding for healthcare delivery and comparative effectiveness research. These grants are directed towards young investigators, and the funding often includes specific provisions for training in operations research, healthcare economics, or safety and quality. A number of anesthesia training programs are following suit. The anesthesia departments at Yale, the University of Alabama at Birmingham, the University of Michigan, the University of Washington and the University of California at Irvine all have dedicated training for residents and fellows in patient safety, health policy research, and quality management. Other institutions, such as Vanderbilt and Mount Sinai, offer dedicated training in healthcare information technology. Academic anesthesiologists of the future will need to be experts in electronic data collection, aggregation, and interpretation; these skills will be just as important as anatomy, pharmacology and physiology were to generations past.

Conclusion

Consistent with our specialty's long history of advancing patient safety, the evolution of Big Data registries in anesthesia is leading all of medicine into a new era. In the near future we will learn from every patient we care for, and will have objective evidence to guide decisions about drugs, monitors, and anesthesia techniques. This advancing knowledge will free us to take on ever more challenging patients and operations, and to take our place as leaders and facilitators of procedural care of all kinds.

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Anesthesia services with poorly executed staffing plans will continue to fail because they recruit and retain the wrong people.

The disruptive innovation in anesthesia services is the development and use of aggressive human resource management (HRM). Anesthesia services fail or underperform when they are unable to recruit and retain the right people in the right places at the right time with the right leadership to have effective teamwork. Effective HRM will remedy this problem. Just slapping some anesthesia professionals together is no more likely to provide a high functioning team than picking random people off the street. An especially troubling situation occurs when an anesthesia management company takes over an anesthesia practice, especially an all-anesthesiologist practice, and tries to institute an ACT model using the existing anesthesiologists who have never worked with CRNAs. And they double down on this error by recruiting CRNAs with little or no input from local staff. This "team" is a recipe for underperformance or even outright failure.

What about actual disruptive technologies? We haven't seen them yet, but it doesn't mean that they are not out there someplace, possibly in a garage in Palo Alto or in a business park in Alabama. When the killer app, program or device appears, it may spread very rapidly. Think iPod, iPhone and iPad. It is easier to adopt a new physical device than an idea, but it takes the right staff to adopt anything.

There is another caution for anesthesia professionals working in ASCs, particularly those that are owned by physicians or for-profit corporations. These entrepreneurial organizations embrace new ideas and will expect a similar attitude from their anesthesia service partners. These organizations may also be technophiles and will anticipate reasonable efforts to incorporate technology that will improve care and financial performance. In services focused on performance improvement through innovation, laggards need not apply and will certainly not be retained for very long.

It's important not to confuse cost and price. There is an old management saying, "Beware the cost of the lowest price." A mediocre clinical service in an ASC would be a costly mistake. In an era of social media and patient satisfaction surveys, missteps are amplified and publicized. An innovation might have a lower price tag for a while, but its success or failure will depend on its true cost to the ASC in the long run.

So, what does this mean for ASCs and anesthesiologists? Some anesthesia professionals may not be suitable for the ASC and/or the ACT environment. Some future combinations of anesthesia professionals and technology will be far different from the models of today. Local conditions, payer requirements, and governmental regulations will determine the exact composition of the anesthesia staffs for any ASC. All other things being equal, an anesthesia service making aggressive use of HRM and technology will be the safest and most economical facility in any locale. With the right people properly led, almost anything is possible.

William Hass, MD, MBA has been actively involved in anesthesia practice management for more than thirty years. He currently is the medical service organization (MSO) evangelist for PhySynergy, an MSO based in Huntsville, Alabama. PhySynergy executives had more than 100 years cumulative service in anesthesia service management. Dr. Hass is also the medical director for the Madison Surgery Center in Madison, Alabama. He can be reached at whhass@physynergy.com.

Performing High Acuity Cases in ASCs: The Anesthesiologist's Role

Laura Miller
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Higher acuity cases such as joint replacement and spinal fusions have moved into the ambulatory surgery center setting over the past few years as minimally invasive techniques allow surgeons to perform traditionally inpatient procedures in an outpatient setting.

The anesthesiologist plays a crucial role in making these cases successful. If patients have a great experience, appropriate pain expectations and continue to make progress after they return home, they're likely to recommend the center to others and revisit the next time they need a procedure.

"When a patient says they didn't have a good experience and felt sick, we just can't cut that person loose. We have to check up on them and I think ASCs do a great job of looking at the patient surveys and following up," says Charles Tullius, MD, an anesthesiologist in Savannah, Ga. "If the patient has one knee done at the center, they'll return when they need the next knee done if the surgery and postoperative recovery went well."

Catherine Schmidt, MD, an anesthesiologist with Northern Wyoming Surgical Center in Cody, and Dr. Tullius discuss some of the biggest challenges with high acuity cases in ASCs and their role in making sure these cases are successful at the center.

Challenges

More complex orthopedic and spine procedures are now moving into the outpatient setting, which has

economic and clinical value for the patients. However, not all patients are safe for surgery in the ASC and the anesthesiologist may be the last person in line to recognize a potential issue before moving forward with the case.

"Anesthesiologists must be especially vigilant at ASCs with the higher acuity cases," says Dr. Schmidt. "We strive to maintain hemodynamic stability during and after these cases. One challenge we specifically have is that we are not allowed to administer blood products at the ASC."

As a result, patients who are at high risk of complications are often taken to the hospital setting. Issues such as obesity and sleep apnea present huge challenges to anesthesiologists as well. Obese patients process anesthesia differently, which could lead to complications. However, obese patients also make up a significant percentage of patients who will need the orthopedic procedures that are moving into ASCs today.

"If the patient's medical problems aren't in control and they receive a large dose of anesthesia, sending them home right away may be unsafe," says Dr. Tullius. "They may look fine while they are at the center, but they metabolize their medicine after they go home and if they don't have the proper supervision, there could be unsafe consequences."

The second big issue Dr. Tullius often sees among patients is undiagnosed sleep apnea. Delivering anesthesia to someone with sleep apnea could have disastrous results, but many patients claim they don't have the time to undergo a sleeping study to confirm the diagnosis. Nurses can ask questions about symptoms of sleep apnea, but without the tests it's difficult to pinpoint.

Controlling Patient Pain

The advent of regional anesthesia allows anesthesiologists to control the patient's pain for outpatient procedures and feel comfortable sending them home within hours of surgery. Dr. Schmidt has a team of surgical nurses assist her with peripheral nerve block procedures and airway management to ensure everything goes smoothly.

The anesthesiologist must feel comfortable administering regional anesthesia blocks; otherwise they rely on narcotics to control postoperative pain.

"The patients' pain control depends on the skill and speed of the surgeon and the ability of the anesthesiologist to mitigate pain," says Dr. Tullius. "A big shoulder operation is painful and if the

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anesthesiologist does a pain block that lasts 12 to 14 hours, the pain is mitigated. But if they don't and the patient is given narcotics, that could make them sleepy and they are sent home with the narcotics in their system."

Patients at Northern Wyoming Surgical Center are able to stay up to 23 hours which gives the medical team extra time to ensure patients have recovered enough to return home. Dr. Schmidt uses peripheral nerve blocks to minimize postoperative pain and educates the patient about using continuous nerve blocks after discharge.

"For high acuity orthopedic cases we do at our ASC, the current trend includes performing effective peripheral nerve blocks to minimize the pain postoperatively. Often this means sending patients home with continuous nerve blocks that can keep a shoulder, hip or knee numb for two to three days after a shoulder, hip or knee replacement," says Dr. Schmidt. "Since these patients can only spend one night at an ASC, our goal is to ensure excellent postoperative pain management so patients don't end up in the ER the next day."

Practicing Efficiency

Surgery center physicians and administrators want to remain efficient and fill their schedules with the appropriate patients.

"Much of the responsibility of ensuring that high acuity cases run smoothly and have good outcomes at ASCs is the purview of the anesthesiologist," says Dr. Schmidt. "We take care of the patient's medical illnesses as well as surgical-specific issues while the patients are at the ASC. We function much as the internal medicine physician or pediatrician would in the hospitals and as anesthesiologists; this is the definition of perioperative physician."

Communication between the surgeon, surgery center and anesthesiologist is very important to prepare for each patient. This will prevent cancellations, or worse—transfers from the center. Dr. Schmidt outlines the process at her center to identify issues and promote efficiency:

- Nurses make a preoperative phone call to obtain a patient history three to four days before surgery.
  - Nurses go through "Anesthesia Alerts" with the patients to identify issues ahead of time.
  - They obtain cardiac testing results, sleep study results, lab work and x-ray results beforehand.
- The nurse informs the anesthesiologist of any pertinent medical or surgical issues to manage them before the day of surgery.

"The best quality of care for every patient is due to great teamwork," says Dr. Schmidt. "Our ASC team, from administrator to housecleaner, works together to ensure efficiency."

When anesthesiologists identify a preoperative issue on the day of surgery, the case must be cancelled. Canceling cases throws a wrench in the ASC's well-oiled machine and comes at a financial loss. However, anesthesiologists must speak up if they identify a patient they aren't comfortable proceeding with at the center.

"You can fix a lot of that problem by making preop phone calls far enough in advance so there aren't any surprises on the day of surgery," says Dr. Tullius. "Find out a week in advance that the patient is having chest pain when they walk up steps so in the intervening time you can get them to a cardiologist for stress tests and make sure they are okay before undergoing the surgery. If you find that out on the day of surgery, the case has to be cancelled."

Future Potential

As procedures and anesthesiology evolve, there is a potential that more cases will move from the inpatient hospital setting to the outpatient surgery center. Economically, surgery centers are less expensive than hospitals and will continue to be a good option for appropriate cases.

"I am hopeful that in the future we will continue this trend and it will allow us to perform other high acuity cases in the ASC setting," says Dr. Schmidt. This may be the case as surgeons currently performing outpatient procedures in the hospital setting transition those cases to the ASC.

However, Dr. Tullius sees surgery for the sickest patients remaining in the hospital. "I really think the trend will be that hospitals will take the sickest cases and the ASCs will go back to performing the high volume cases," he says.

Laura Miller is Editor-in-Chief of Becker's ASC Review and Becker's Spine Review, online and print publications of Becker's Healthcare. She joined Becker's Healthcare in 2010 and has previous experience as a journalist and freelance writer for various online and print publications. Ms. Miller graduated from Knox College with a degree in Creative Writing. She is located in Chicago and can be reached at lmiller@beckershealthcare.com or 312-253-9170.

Endoscopy: Revisited

Jody Locke, CPC
Vice President of Anesthesia and Pain Management Services, ABC

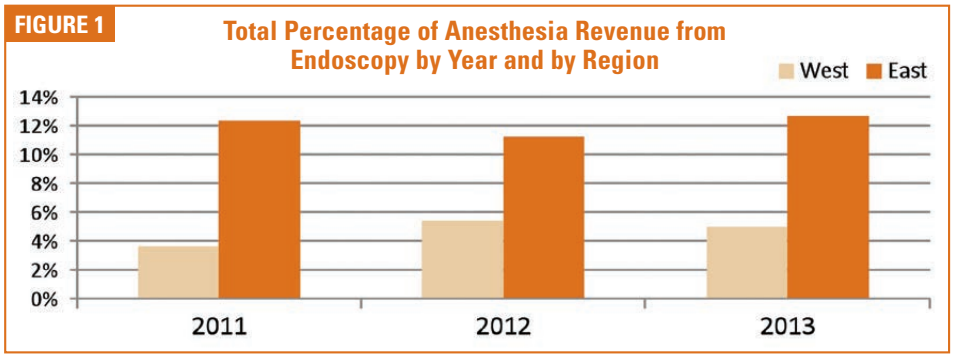
Just mention endoscopy at an anesthesia conference and see what happens. Few topics elicit such strong but disparate responses. For the anesthesiologist from the East endoscopy has been, and continues to be, his or her fastest growing and most profitable line of business. By contrast, the prevailing view of the physician in the West reflects a very high degree of skepticism. His experience is that the endoscopists don't really want to work with his group. He interprets payer policy as forcing anesthesia through the same funnel of denial as other services and sees no meaningful light at the end of the tunnel, especially with regard to endoscopy. Such is the challenge to today's anesthesia practice management: sorting out the realities of facility expectations, surgeon preferences, payer policies and economic realities and, most of all, rising above the prejudice of emotions. Cynicism and the weight of disappointment too often cloud our ability to make effective management decisions. While the specialty of anesthesia is at a particularly challenging crossroads, many are finding opportunity by reassessing previous assumptions and digging deeper into the analysis of customer expectations and market trends. To this end a review of endoscopy is a particularly fertile field for investigation.

These are five questions that should serve to frame the discussion.

1. How does payment to anesthesia providers for endoscopic procedures fit into the broader national debate about the future of healthcare?
2. Why is there such variability in practice patterns across the country as pertains to the role of endoscopy?
3. What do we actually know about payer policies concerning payment to anesthesia providers for CPT® codes 00740 and 00810?
4. What is an effective management strategy?
5. What conclusions can we draw based on what we currently know about the value of endoscopy as a line of business?

The following is a review of actual data for 26 ABC client anesthesia practices, 13 in the Eastern United States and 13 in Western states over a three year period. Western states include Arizona, California, Idaho, Oregon and Washington. Eastern clients are located in Delaware, Florida, Georgia, Illinois, Ohio, New Jersey, New York, Pennsylvania and Virginia. These are all moderate to large practices that have been ABC clients since 2011; 24 of the practices have been clients since well before 2011. In two cases the clients joined ABC during the year and so their data for 2011 have been annualized to reflect historical production levels.

For purposes of this analysis all claims billed with CPT codes 00740 (upper G.I.) and 00810 (lower G.I.) were pulled for all 12 months of 2011, 2012 and the first six months of 2013, except as noted above. Charges and payments were tallied based on Date of Service. This represented 83,158 claims in 2011, 100,927 claims in 2012 and 51,072 claims for 2013, which would annualize to approximately 102,144 cases for 2013 if volumes continued at previous levels. Figure 1 indicates the total percentage of anesthesia revenue derived from endoscopy claims by year and region of the country for the practices included in the study.



Endoscopy for Anesthesia and the National Healthcare Debate

The future of payment for anesthesia services for endoscopic procedures will ultimately be determined by a variety of factors: political, clinical and economic. As is so often the case in politics, philosophical principles and policy

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agendas may have more to do with the practical reality of clinicians in the field than clinical relevance or economic realities. Endoscopy is a case in point. If one assumes that it is desirable for all Americans over the age of 50 to get routine colorectal screening, then an argument can be made for the value of making the procedure as painless as possible. Here the economic policy argument hinges on the expectations that spending a little more on anesthesia to ensure that a higher percentage of patients is screened costs less than the alternative in which there is less screening and more colorectal surgery.

Inevitably, the specific realities underlying such broad policy determinations are far more complicated, but such assumptions do often drive public and private payer policy decisions. Apparently, this underlay the interplay between Aetna and United Healthcare a few years ago. Aetna decided to deny claims for anesthesia for ASA physical status I and II patients undergoing routine colonoscopy procedures. In response United Healthcare reaffirmed its policy of paying for such services. Ultimately, Aetna backed off and both payers now generally cover anesthesia for endoscopy. In fact, their rates are some of the best in the industry. How much insight this provides into the inner workings of other payers is hard to tell. The fact is that for years the pessimists have been arguing that the end of reimbursement for endoscopic anesthesia services is imminent and yet, the payments continue unabated, or so it would appear.

Clinical realities in medicine are also subject to their own arcane evolution. The debate as to what categories of providers are sufficiently qualified to administer propofol continues at many levels. Thus far propofol is the agent of choice for GI procedures and anesthesia providers are uniquely qualified to manage the risks of its use but this too could change. The fascinating thing about the specialty is its ability to develop new ways to manage patients through the trauma of surgery with less risk and fewer complications. It is not unreasonable to assume that some new agent or technology will similarly transform the care of endoscopic patients.

Is it true that all such policy decisions are ultimately resolved based on economics? It is not always clear that this is the case. Or maybe it is a matter of how one defines the economics of the issue. The evidence is that in medicine it is not always the cheapest option that wins out. Despite a concerned focus on the cost of healthcare, costs continue to rise faster than for any other sector of the economy. Businesses are continually striving to provide more service for less cost and to push their operations to ever higher levels of productivity and while we hear the same hope for healthcare, the reality does not bear this out.

What appears to happen in healthcare is that the public or policy makers decide on priorities irrespective of the economic implications and then the task that falls to providers is to implement the policies. Today's public debate about healthcare turns on whether it is a privilege or a right. Those that argue that it is a right seem to be gaining ground, especially with the recent changes introduced by the Affordable Care Act. How this general perception will play out in the specific domain of endoscopic care is hard to predict but clearly anesthesia has become a significant stakeholder in the debate. Curiously enough, while it used to be that the cost of anesthesia was 20 to 25 percent of the cost of the surgery, when it comes to endoscopic care anesthesia payments are roughly equal to those of the endoscopists. This fact alone speaks volumes with regard to the public perception of anesthesia and is consistent with the view that two factors have driven most advancement in healthcare: antibiotics and anesthesia.

TABLE 1

Typical Mix of Upper and Lower GI Endoscopy Procedures, Colonoscopy Practice

45378	49%	Colonoscopy
43235	28%	Upper GI Endoscopy
45380	8%	Colonoscopy with biopsy
43239	7%	Upper GI endoscopy with biopsy
43260	2%	ERCP
45385	2%	Colonoscopy with removal of tumor
43246	1%	Upper GI Endsocopy with placement of gastrostomy tube
43249	1%	Upper GI Endsocopy with baloon dilation of esophagus
43262	0%	ERCP with spincterotomy
43268	0%	Upper GI endoscopy with transendoscopic yltrasound-guided aspiration or biopsy

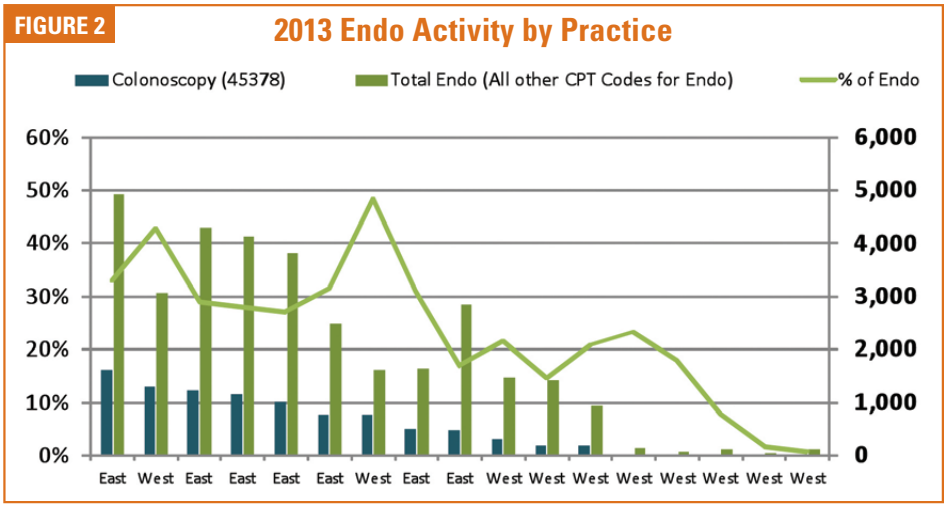
Diverse Practice Patterns Across the Country

It is important to note that from a claims processing perspective, endoscopy poses a very specific coding and billing challenge. Claims are typically processed based on one of two CPT codes: 00740 for upper GI procedures and 00810 for lower GI procedures. We tend to associate these codes with diagnostic and screening services, but this is not always the case. Table 1 indicates a typical mix of services that may fall under the heading of endoscopy for a practice that focuses on colonoscopy. (Under the ASA CROSSWALK®, a wide variety of surgical procedures all fall under one rather generic category.)

A useful predictor of a dedicated endoscopy practice, however, is the percentage of colonoscopies performed. Herein lies the most obvious factor differentiating practices across the country. Figure 2 compares the impact of colonoscopy on the various practices included in the study. As indicated, even the practice with the highest percentage of colonoscopy cases is under 50 percent. There is an interesting strategic issue raised by this mix. Some will claim that the real growth and revenue potential lies in capturing the colonoscopy business because these are short cases involving healthy patients with potential a favorable payer mix. Others will look at these practices with a particularly high percentage of colonoscopy cases and see this as a point of vulnerability. This is the kind of tricky strategic challenge that anesthesia practices must sort out.

The site of service is another significant factor in understanding the nature and extent of a practice's commitment to endoscopy. For reasons that are not entirely clear or logical, a higher percentage of endoscopy centers in the East encourage the participation of anesthesia practices in the management of their patients. Such situations make it easy to determine the profitability of the commitment in that all of the key variables for analysis, volume, payer mix and utilization are easily isolated and defined. However profitable such arrangements may be, they pose some special challenges to an anesthesia practice, namely, if the arrangement is too profitable, then the center may be interested in or exploring ways to retain a portion of the anesthesia revenue itself. There has been considerable debate in recent months about corporate models that attempt to co-opt the role of the anesthesia practice.

FIGURE 2



While endoscopy centers continue to be built across the country, these venues are still the exception rather than the rule for the typical anesthesia practice. The ideal setting involves the dedication of one or two rooms in an ambulatory surgery center or outpatient facility specifically for the provision of endoscopic procedures. Such arrangements typically prove to be the most profitable for three reasons: consistent volume of cases, quick turn-over and favorable payer mix. From a business perspective, a service line can best be assessed when all the variables such as staffing and revenue are clearly identified and logically integrated. This is what cost accounting attempts to do and its role in anesthesia practice management is becoming ever more relevant. The most complicated situations to analyze are those where endoscopic cases are mixed in with the rest of the surgical schedule.

One other question is often asked about the profitability of endoscopy. What is the impact of the anesthesia care team? In theory, the use of CRNAs allows a practice to reduce its cost of providing care, a fact that should make it possible for a practice to be more competitive. The fact that the anesthesia care team is more prevalent in the East than the West may explain part of the regional disparity but cannot be the whole story. Some notable practices in California have significant stakes in endoscopy centers with a physician-only model. The real issue, however, is that the care team only reduces costs when a physician's salary and expenses can be leveraged over multiple rooms. Typically endoscopy suites only consist of one or two rooms and so the opportunity for leverage is limited.

What is the ideal arrangement for the anesthesia practice and when is endoscopy care most profitable? Quite simply, it is any situation where the net financial yield per clinical day of service equals or exceeds that of the other venues covered by the practice. The two most important metrics to monitor are average cases per day and average yield

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per case. These are the foundation for any financial serious analysis and should be integral to any practice's ongoing review of its endoscopic activity. Table 2 below lays out the elements of such a review. While this might be an extreme example it is based on actual data. The real point, though, is that even with a lower yield per case it is the productivity of the facility that makes the arrangement so favorable, no matter what the staffing model. This is the aspect of endoscopy that makes it so favorable for anesthesia practices. The keys to success are efficiency of the facility and productivity of each anesthetizing location.

More important, however, the ideal arrangement is the one where the endoscopists believe that the anesthesia providers will enhance their productivity and profitability. It is on this point that there appears to be the greatest disparity of perceptions across the country. Some centers and endoscopists are simply more willing to partner with their anesthesia colleagues than others. Those anesthesia practices that have been particularly successful in growing their endoscopy business claim this is little more than an educational and marketing challenge.

The Impact of Payer Policies

The impact of payer mix cannot be overstated; even a slight increase in the percentage of Medicare patients can dramatically reduce the average yield per case. Of even greater concern, however, is the ability of payers to change their policies such that payments that were once the norm become the exception, or where the cost and time associated with managing denials and the need to justify the medical necessity of the service makes the cost of the service prohibitive. Such changes can completely invalidate the best laid plans and the most careful business planning. Such unilateral payer policy decisions are especially noxious in that they are completely beyond the control of the practice. Historically, and despite the common perception of many providers, payer policies have not been an unreasonable impediment to most anesthesia practices in endoscopy. Clearly, though, the fear is that this could change dramatically and very quickly.

Table 3 summarizes average actual payments per case for the practices in this study. Not surprisingly, the Medicare average payment per case is about 38 percent of the average Preferred Provider Organization (PPO) #1 plan rate with the Medicaid rate being even lower than this. Overall about 34 percent of all cases billed in 2013 were billed to either a traditional or a managed Medicare plan but some practices saw more than 45 percent Medicare patients, which has a material impact on the potential yield per case.

Based on the data collected for the practices in this study over a three year period, the overall yield per endoscopic case has remained reasonably constant across the country. There is a slight drop from 2012 to 2013 but further review would be required to determine if this was simply the result of payer mix changes or actual declines in payment per case. Medicare rates have increased slightly as have those for most PPO and managed care plans. Those on the front lines of accounts receivable management complain that there are more denials and that it is getting harder to get paid, but based on the results this is more of an operational challenge than a change in economic reality. Aggressive accounts receivable management is an important factor in the success of any practice and the impact of payer inconsistency in the adjudication of anesthesia claims for endoscopic care is more typical than exceptional.

Given the nature of the service, though, these rates will still result in a competitive average daily yield if the facility is well managed and productive.

In general, the conclusion one might draw from these data is that it continues to be business as usual for endoscopy. Not indicated here is the fact that only two of the practices realized an increase in their net yield per case, while 12 saw a decrease of anywhere from 5 to 28 percent. The rest have been collecting just about exactly what they were collecting in 2012. As is so often the case, we should not be too quick to generalize based on limited data. Each practice and each line of business needs to be assessed individually to draw any

TABLE 2

Endoscopy Metrics

29.42	Minutes per case
9.82	Cases per day
4.82	Hours of billable anesthesia time per day
$384.56	Yield per case
$3,779.79	Yield per Anesthetizing location day

TABLE 3

National Average Payment Rates

	2011	2012	2013
Medicare	$164.56	$168.78	$168.65
Medicaid	$138.69	$122.86	$119.20
PPO1	$433.25	$439.14	$442.19
PPO2	$651.69	$692.45	$636.91
PPO3	$519.72	$527.96	$542.89
PPO4	$800.16	$661.94	$552.85
Overall	$331.84	$334.00	$319.10

meaningful conclusions about underlying patterns or trends.

Given this generally favorable scorecard, then, where is the basis for concern with regard to the future of reimbursement for these services? It is being driven by the payers and it pertains to the issue of medical necessity. Endoscopy has been a subject of special concern to CMS and others for many years because such a high percentage of cases are billed as Monitored Anesthesia Care (MAC) cases. A MAC case must be specifically flagged on the claim form with a –QS modifier. This is not intended to result in a reduction in payment, but, depending on the payer, has the potential to increase the likelihood of a denial or request for additional information. Many Medicare intermediaries also require a separate diagnosis to justify the payment to the anesthesia provider. There is a long tradition of compliance audits following changes in payment patterns, and anesthesia for endoscopy is no exception. With increased utilization comes tighter policies in an attempt to manage the payer's exposure.

An Anthem-Blue Shield policy that became effective July 2013 is a case in point. Of particular note is the following statement: "The routine assistance of an anesthesiologist or Certified Registered Nurse Anesthetist (CRNA) for individuals not meeting the [criteria listed in the policy] who are undergoing gastrointestinal endoscopic procedures **is considered not medically necessary**." The list of criteria for medical necessity describes a common list of risk factors for either undergoing anesthesia or a surgical procedure. Such policies open the door to closer scrutiny of endoscopy claims and are sure to lead to higher denial rates over time. It is because of such policies that many practices in California will not provide anesthesia to ASA I and II patients. It is also why they tend to be so diligent in confirming documentation of medical necessity for the anesthesia provider's service in anticipation of a request for additional documentation.

At the heart of the matter is the ultimate payer litmus test for payment justification: medical necessity. Unfortunately medical necessity is often in the eye of the beholder and subject to its own arcane algorithm of application. What makes a service medically necessary is not an easy question to answer. If a patient has an infected appendix that threatens to contaminate the perineal space we assume that it is medically necessary to remove it because the procedure will restore the patient's health and avoid other complications. Does the same logic apply to the 94 year old patient undergoing coronary artery bypass surgery or the 50 year old executive who is reluctant to submit to a colonoscopy with moderate sedation only because it is an uncomfortable procedure? Payers are attempting to define medical necessity by defining the necessary diagnostic preconditions for a service but this is where the process starts to break down. Maybe the implementation of a new, more specific diagnostic code set, ICD-10, will make these determinations more rational, but maybe not. Ultimately an individual must still make a subjective assessment of the value of the service and herein lies the ongoing uncertainty of medical necessity.

The administration of anesthesia to healthy patients for routine endoscopic screening is a clear point of vulnerability and should be monitored closely. This is, in part, why it is so important to track endoscopic volume at the CPT level, but also why diagnosis is so important. The use of "V" codes for diagnostic screening has been a point of particular vulnerability in the current diagnosis coding sequence called ICD-9, and is likely to be even more so once ICD-10 is implemented next October. Payers use two codes to adjudicate claims: the CPT surgical or anesthesia service code and the diagnosis code. It is only by monitoring the impact of particular combinations of these codes that a practice can monitor and gain insight into payer claims' adjudication policies. This is why there is such concern about what are referred to as "Black Box edits." Practices that try to anticipate payer edits by picking payable diagnoses should be very careful for such practices will ultimately incur a higher level of risk for an audit.

An Effective Management Strategy for Endoscopy

No one can predict the future of reimbursement for endoscopy with certainty. No crystal ball is that powerful. The best we can hope for is to monitor patterns of payer behavior and policy changes and infer the implications. Thus far the pessimists have been proven wrong, but maybe their day will come. Those who chose not to participate have clearly missed a potentially valuable line of business. The big winners have been those practices, primarily in the Northeast, that have aggressively pursued contracts at endoscopy centers and that have been fortunate to have very productive endoscopy suites in their hospitals. Hindsight is 20/20 but what should we be monitoring as the market evolves? Where

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TABLE 4 Comparing Profitability at Different Locations

	Facility A	Facility B	Facility C
Days	139	110	89
Cases	829	264	177
Expected	$404,478.56	$152,379.23	$67,035.28
Allowed	$374,515.73	$142,493.47	$55,140.73
Actual DOS $	$385,049.03	$140,035.10	$62,928.42
NCR	95.2%	91.9%	93.9%
Yield per Case	$464.47	$530.44	$355.53
Yield per Day	$2,770.14	$1,273.05	$707.06
Colonoscopies			
Cases	79	63	33
% of Total	9.5%	23.9%	18.6%
Average Minutes	79.46	51.02	53.24
Average Yield	$424.67	$509.67	$265.03
Payer Mix			
Medicare	39.45%	34.74%	48.65%
PPO	35.59%	52.20%	20.86%
Medicaid	16.05%	3.84%	13.59%
HMO	4.58%	6.45%	2.60%
Other	3.20%	1.54%	12.35%
Commercial	1.01%	0.00%	0.00%
Self Pay	0.12%	1.22%	1.94%

are the particular risk areas? What is the best way to ensure that today's silk purse does not suddenly become tomorrow's sow's ear?

An effective management strategy for any line of business must be specific to each site of service. As a general principle, a cost center model is most appropriate. The idea is to be able to establish and monitor the profitability of each venue (as in Table 4), which would involve tracking all the factors that determine both the potential revenue stream, the overall productivity of the venue and the cost of providing the care. This is the direction where most anesthesia practice management accounting is heading because of the challenge of unprofitable lines of business and venues. Today's practices must be more vigilant and willing to take appropriate action when particular lines of business are identified as unprofitable because unproductive venues can be the death of a practice.

Applying this concept to endoscopy is not always easy, especially when endoscopy cases are scheduled in surgical venues, but it is critical in all situations where the specific focus of a coverage contract is endoscopic care. Consider the example mentioned above. A practice provides anesthesia for endoscopy in three distinct venues: two hospitals and a surgery center. Good accounting requires a clear delineation of the factors affecting the profitability of each site in order to assess the actual impact on the practice as a whole. It may be that one venue is so inherently profitable that it more than covers the cost of the others, which is fine. Suppose, however that the revenue from the once profitable surgi-center business starts to slip dramatically. This could be critical to the overall management strategy of the practice. The same five factors listed below will also serve as useful criteria for the evaluation of potential new venues.

1. Volume trends are essential to profitability and it is especially useful to monitor volume at the CPT level because the goal is a preponderance of short cases involving relatively health patients.
2. Payer mix can be tracked at a fairly high level for purposes of monitoring the impact of Medicare and Medicaid on the overall revenue stream.

3. Payer policies, however, should be monitored at the individual payer or plan level because these will determine the ongoing viability of the practice and because failure to identify changes in payer requirements on a timely basis can prove both significant and costly to resolve.
4. Monitoring the accounts receivable closely is also essential. This would typically involve a regular review of the consistency and accuracy of contractual payments, the impact of deductibles and co-payments and changes in payer processing that can materially alter cash flow.
5. In addition, the practice should closely monitor the productivity of each venue on a normalized basis by tracking the average cases per day and the average net yield per case so that there is always an accurate determination of the overall yield per provider day.

There is no one way to achieve this level of financial accountability but it should be understood that the data elements must somehow be combined to provide a clear and concise dashboard that the practice can monitor. Few billing systems have one report that brings all the pieces together in a single report, which is where a spreadsheet may prove the most useful accounting tool of all. Visual charting of volume, payer mix, A/R, productivity metrics and overall profitability is always an effective management tool. The key to effectiveness is the ability to monitor performance trends at a high level with an eye to outliers and exceptions, so that problems and issues can be identified and analyzed before they become significant.

Conclusions

Anesthesia for endoscopy is not a new phenomenon. Many of us have been monitoring the economics of this line of business for years, wondering whether or when the market will change. We are still waiting for the crash that so many have anticipated for so long. The fact is that despite all the hype and all the dire predictions change actually happens only incrementally in medicine. Payers adopt more stringent policies and this impacts the processing of their claims. This is where payer mix is either a practice's curse or salvation. It is all about the numbers. The sum of the factors identified above must be adequate for the arrangement to be profitable and the changes over time should be neutral or positive.

Every anesthesia practice finds itself covering three kinds of venues: those that are inherently profitable with no financial support from the facility; those that are profitable with some level of financial support; and those that are completely unprofitable. Because there is no evidence that any facility is going to subsidize an anesthesia practice for anesthesia for endoscopy coverage then these arrangements must, by definition, fall into the first category if they are to be viable. This is the challenge facing all anesthesia practices today: knowing which coverage obligations will meet the financial requirements of the practice especially given the reimbursement and policy changes that have been discussed. Given the evidence, though, it is safe to assume that there is likely to be a place for anesthesia in managing patients through endoscopic procedures for the foreseeable future. Just as preparation is the most critical phase of an anesthetic procedure, so too is rigorous due diligence the most critical predictor of success in any endoscopic service agreement. Success and opportunity will come to those who do their homework and test their assumptions assiduously.

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Reporting Postoperative Pain Management in 2014

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According to *Recent Advances in Postoperative Pain Management* (Nalini), approximately eighty (80%) percent of patients experience postoperative (or acute) pain after surgery, and pain is one of the most common medical causes of delayed discharge after surgery. Although there have been major breakthroughs in postoperative pain management (POPM), many factors are considered before deciding on the type of pain therapy provided to surgical patients, including co-morbidities, psychological status, exposure to analgesic therapies, and the type of surgical procedure. Studies indicate postoperative pain is associated with, but not limited, to gynecological and orthopedic procedures and have found recovery is faster and fewer complications are experienced when the acute pain is treated aggressively. During the past twenty years, new technologies to aid postoperative pain control have gained widespread use. (Medscape)

Control of POPM is truly a team effort between the surgeon and the anesthesia provider. It is important for anesthesia coders to pay careful attention to changes regarding coding and documentation for POPM as changes may affect an anesthesia provider's ability to bill separately for these services. Of note, there were a number of text changes in the National Correct Coding Initiative (NCCI), Anesthesia Services section found in Chapter II, Pages II-7 through II-12 in Version 18.0 (effective January 1, 2012) and Chapter II, Pages II-6 through II-15 in Version 19.0 (effective January 1, 2013). These changes outline under which circumstances acute pain management is payable and emphasize the requirement of documentation from the surgeon requesting assistance from an anesthesia provider. Further, a recent proposed draft Local Coverage Determination (LCD) by Noridian Administrative Services, LLC regarding POPM indicated "Providers should not expect separate payment for the establishment of epidural or other pain blocks unless the block is placed following discharge from PACU due to documented inadequate pain control." As originally written, the Noridian LCD would have drastically changed the way anesthesia providers are paid for anesthesia services. Both the American Society of Anesthesiologists (ASA) and a number of anesthesiologists who serve on their state Carrier Advisory Committee (CAC) worked with Noridian to ensure they had a clear understanding of acute pain management services and the significant changes in the original language of the draft LCD before it became effective on 11/11/13. In the final version, Noridian outlines expected documentation for Medicare Part B as follows:

> Reimbursement for the control or management of acute pain in the immediate postoperative period is generally packaged into the payment for the surgical procedure. However, if a need for transfer of pain management is documented and ordered by the surgeon and the accepting provider documents the need for and acceptance of transfer of care, separate reimbursement may be made for the service.

Presumably, both the NCCI changes and the Noridian LCD are based on the premise of the Centers for Medicare and Medicaid Services (CMS) Medicare Claim Processing Manual, Chapter 12—Physicians/Non-Physician Practitioners that postsurgical pain management by the surgeon is included in the global surgical package. However, the NCCI recognizes the ability of the surgeon to "request the assistance of the anesthesia practitioner if the degree of postoperative pain is expected to exceed the skills and experience of the operating physician to manage it." NCCI also indicates POPM procedures may be "administered preoperatively, intraoperatively, or postoperatively."

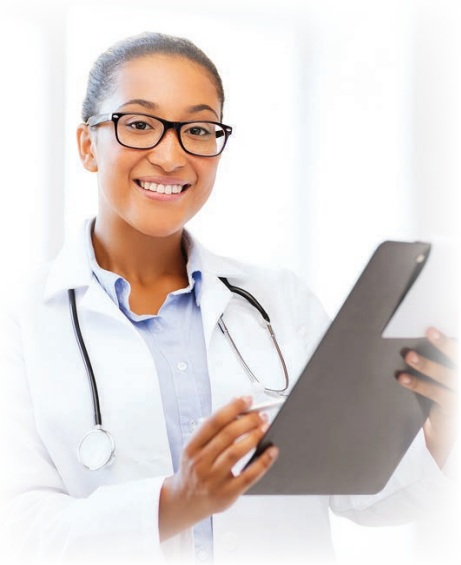
Although postoperative pain is the responsibility of the surgeon and payment is bundled into the surgeon's global fee, anesthesia services may be reported separately if there is a request by the surgeon for an anesthesia practitioner to provide POPM *and* anesthesia for the surgical procedure is not dependent on the efficacy of the regional anesthetic technique. The ASA Relative Value Guide® (RVG™) indicates that the following conditions apply:

1) Anesthesia for the surgical procedure was not dependent upon the efficacy of the regional anesthetic technique;
2) Time spent on pre- or postoperative placement of the block is separated and not included in reported anesthetic time; and
3) Time for a post surgical block that occurs after induction and prior to emergence does not need to be deducted from reported anesthesia time.

The RVG also suggests documenting the surgeon's request, however, and according to the NCCI the "surgeon is responsible to document in the medical record the reason care is being referred to the anesthesia practitioner." This provision requires a written request from the surgeon—which indicates there must be communication between anesthesia and surgical staff to ensure the requirements for POPM are well documented for each patient on a case-by-case basis.

TABLE 1

CPT Procedures Single Injection	Description
64415	Injection, anesthetic agent; brachial plexus, single
64445	Injection, anesthetic agent; sciatic nerve, single
64447	Injection, anesthetic agent; femoral nerve, single
64450	Injection, anesthetic agent; other peripheral nerve or branch
CPT Procedures Continuous Catheter	**Description**
62318	Injection(s) including indwelling catheter placement, continuous infusion or intermittent bolus of diagnostic or therapeutic substance(s) including anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, includes contrast for localization when performed, epidural or subarachnoid, cervical or thoracic
62319	Injection(s) including indwelling catheter placement, continuous infusion or intermittent bolus of diagnostic or therapeutic substance(s) including anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, includes contrast for localization when performed, epidural or subarachnoid, lumbar or sacral
64416	Injection, anesthetic agent; brachial plexus, continuous infusion by catheter (including catheter placement)
64446	Injection, anesthetic agent; sciatic nerve, continuous infusion by catheter (including catheter placement)
64448	Injection, anesthetic agent; femoral nerve, single continuous infusion by catheter (including catheter placement)



Procedure coding will depend on the site of the injection area and placement of either a block(s) or a continuous catheter. See Table I for some of the more common Current Procedural Terminology® (CPT) codes associated with POPM services. A -59 modifier should be appended to indicate that the service or services were distinct procedural services from the anesthesia provided for the surgery. Remember—if the block/catheter was used for the surgery the procedure is not separately billable, although discontinuous anesthesia time may be reported for the time spent placing the block/catheter. For example, if a carpal tunnel procedure is being performed with a wrist block, a code from the CPT anesthesia section (01810 + anesthesia time for both the anesthesia during the wrist surgery and time related to placing the wrist block) is reported. No separate code is reported for the wrist block.

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Reporting Postoperative Pain Management in 2014

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Coders should check the documentation carefully and ensure they understand when POPM is separately reportable and that there is an understanding of the procedure being performed. For example, several terms are used to describe a "brachial plexus" block—such as "interscalene," "infraclavicular" or "supraclavicular"—which should not be confused with codes with a similar sounding description (such as "suprascapular"). A "popliteal" block procedure note, without a description of the anatomy is not helpful in determining the correct code to report. A "popliteal fossa" injection is reported with CPT code 64445 (sciatic nerve), whereas a "saphenous popliteal" is reported with CPT code 64450 (other peripheral nerve block). Also, transversus abdominis plane (TAP) blocks do not have a specific procedure code. CPT code 64450 may be used; however, CPT code 64425 may be appropriate for TAP blocks performed for inguinal hernia repair when the ilioinguinal/iliohypogastric nerves are anesthetized. (Mariano) If coders are unclear about the services provided, they must confirm ALL questionable details!

If ultrasound guidance is utilized and appropriately documented, CPT code 76942 [Ultrasound guidance for needle placement (eg, biopsy, aspiration, injection, localization device), imaging supervision and interpretation] may be reported separately with a -26 modifier (if applicable). Documentation of the use of ultrasound alone is not sufficient —according to CPT Non-obstetrical ultrasound coding guidelines, "Use of ultrasound, without thorough evaluation of organ(s) or anatomic region, image documentation, and final, written report, is not separately reportable." A retrievable image should be available, along with a procedure note describing the use of ultrasound for placement of the block. It is also important for anesthesia coders to remember that codes obtained from the surgery and radiology section are flat-fee and, although no time is reported separately, documentation must support the time the block was placed (i.e. 7:21 to 7:34) to clearly indicate that it was separate from the reported anesthesia time when applicable.

Reporting daily management of postoperative pain will vary, depending on the services provided. According to the NCCI, "CPT code 01996 may only be reported for management for days subsequent to the date of insertion of the epidural or subarachnoid catheter." CPT 01996 would not be reported for other types of continuous catheters, such as CPT codes 64416, 64446, or 64448. Coders should determine whether the documentation supports an Evaluation and Management (E&M) service, including the chief complaint (related to postoperative pain) and at least two of the three required elements for subsequent hospital care (History, Examination, and Medical Decision Making). Keep in mind that if the surgeon has transferred responsibility for postoperative pain management to an anesthesia provider, only one physician or qualified healthcare professional should report these services.

Acute pain diagnosis codes are separately identified in the 338 section of the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), although there has been some confusion regarding reporting a diagnosis code from this section. According to ICD guidelines, "Routine or expected postoperative pain immediately after surgery should not be coded." However, the guidelines also state that "If pain control/management is the reason for the encounter, a code from category 338 should be assigned as the principal or first-listed diagnosis" and "may be reported as the principal or first-listed diagnosis when the stated reason for the admission/encounter is documented as postoperative pain control/management". As routine pain management is provided by the surgeon, it is my opinion a category 338 code

TABLE 2

Diagnoses Supporting Medical Necessity for Postoperative Pain Management (Noridian)

ICD-9-CM	ICD-10-CM	Description
338.11	G89.11	Acute Pain Due to Trauma
338.12	G89.12	Acute Post-Thoracotomy Pain
338.18	G89.18	Other Acute Postoperative Pain
338.19	R52*	Other Acute Pain (*Pain Unspecified)

should be reported when anesthesia is requested to provide POPM. Note in Table 2, published in the final Noridian LCD, category 338 is recognized in the list of ICD 9 codes that support medical necessity. Since ICD-10 isn't too far away, the table has been updated to include these conversion codes.

Historically, anesthesia practices have relied on documentation by the anesthesia provider to support the surgeon's request for POPM, such as a procedure note or anesthesia record indication of the surgeon's request. In the current environment, coders rely on the documentation guidelines as outlined in the NCCI and the recommendations listed by the ASA. Documentation in the medical record must support the surgeon's transfer of care and this requirement means that anesthesia practitioners should request written, rather than verbal, communication. According to Dr. Peter Dunbar, who serves on the Noridian CAC for Washington State, standing orders from surgeons will be acceptable as long as they are both surgeon and procedure specific.

Resources

American Society of Anesthesiologists (ASA) Relative Value Guide® (2013) Reporting Postoperative Pain Procedures in Conjunction with Anesthesia (Pages 58 – 65) http://www.asahq.org/For-Members/~/media/For%20Members/Standards%20and%20Guidelines/2012/REPORTING%20POSTOPERATIVE%20PAIN%20PROCEDURES%20IN%20CONJUNCTION%20WITH%20ANESTHESIA.ashx

Centers for Medicare and Medicaid Services, Internet Only Manual (IOM), Chapter 12 http://www.cms.gov/manuals/downloads/clm104c12.pdf

Current Procedural Terminology®, Professional Edition (2013), American Medical Association

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)® (2013)

Mariano, Ed (MD), Billing for Regional Anesthesia http://www.edmariano.com/billing-for-regional-anesthesia

Medscape, CSI: Investigating Acute Postoperative Pain: Improved Outcomes and Clinical Horizons http://www.medscape.org/viewarticle/549349

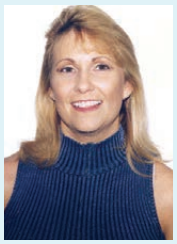
National Correct Coding Initiative, Chapter Two, Version 19.0, Anesthesia Services https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/Downloads/NCCI_Policy_Manual.zip

Nalini V, Sukanya M, Deepak N, Recent advances in Postoperative pain management. Biology and Medicine. Yale J Biol Med. 2010; 83:11–25 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2844689/#!po=70.4545

Noridian Administrative Services, LLC, Proposed/Draft Local Coverage Determination (LCD): Nerve Blockade: Somatic, Selective Nerve Root, and Epidural (DL33188) http://www.cms.gov/medicare-coverage-database/license/cpt-license.aspx?from=~/overview-and-quick-search.aspx&npage=/medicare-coverage-database/details/lcd-details.aspx&LCDId=33187&ContrId=246&ver=4&ContrVer=1&CntrctrSelected=246*1&Cntrctr=246&name=Noridian+Administrative+Services%2c+LLC+(02102%2c+MAC+-+Part+B)&DocType=Proposed_NRTF&DocStatus=Draft&LCntrctr=83*1%7c242*1%7c246*1%7c241*1%7c245*1%7c243*1%7c248*1%7c244*1%7c247*1%7c142*1%7c129*1%7c124*1%7c130*1%7c125*1%7c131*1%7c126*1%7c135*1%7c127*1%7c133*1%7c128*1%7c134*1&bc=AgACAAIAAAAAA%3d%3d&

Noridian Administrative Services, LLC – Link to LCD L33188 from CMS website

http://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=33188&ContrId=246&ver=10&ContrVer=2&Date=11%2f11%2f2013&DocID=L33188&SearchType=Advanced&bc=KAAAAgAAAAAAA%3d%3d&



Kelly Dennis, MBA, ACS-AN, CANPC, CHCA, CPC, CPC-I, has over 30 years experience in anesthesia and speaks about anesthesia issues nationally. She has a Master's Degree in Business Administration, is certified through the American Academy of Professional Coders, is an Advanced Coding Specialist for the Board of Medical Specialty Coding and serves as lead advisor for their anesthesia board. She is also a certified health care auditor and has owned her own consulting company, Perfect Office Solutions, Inc., since November, 2001.

2014 CPT Coding and Key Reimbursement Changes

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The 2014 Current Procedural Terminology® (CPT) edition will have a total of 335 changes, including 175 new codes, 107 revised codes and 47 deleted codes for specialties.

No Anesthesia CPT codes were deleted, revised, or added for 2014. Changes to the 2014 CPT codes may impact some ASA 2014 CROSSWALK® determinations or base units. Anesthesia providers should ensure that they understand the impact of potential revenue or compensation changes due to additions or revisions to the ASA 2014 CROSSWALK (Please refer to Appendix A – Summary of Additions and Revisions in the 2014 ASA CROSSWALK for a complete list of the additions or revisions).

Pain management providers should take note of the additions and deletions in the chemodenervation subsection of the nervous system section of CPT 2014.

Nearly one-quarter of this year's CPT code changes resulted from an ongoing two-year effort to revise gastroenterology codes to capture significant advances in endoscopic

CHANGES		DESCRIPTION	COMMENTS
Deleted	**64613**	Chemodenervation of neck muscle(s) (eg, for spasmodic torticollis, spasmodic dysphonia)	
New	**64616**	Chemodenervation of neck muscle(s), excluding muscles of the larynx, unilateral (eg, for cervical dystonia, spasmodic torticollis)	For bilateral procedure, report 64616 with modifier 50. For chemodenervation guided by needle electromyography or muscle electrical stimulation, see 95873, 95874. Do not report more than one guidance code for any unit of 64616
New	**64617**	Chemodenervation of larynx, unilateral, percutaneous (eg, for spasmodic dysphonia), includes guidance by needle electromyography, when performed	To report a bilateral procedure, use modifier 50. Do not report 64617 in conjunction with 95873, 95874. For diagnostic needle electromyography of the larynx use 95865. For chemodenervation of the larynx performed with direct laryngoscopy, see 31570, 31571
Deleted	**64614**	Chemodenervation of muscle(s); *extremity* and/or trunk muscle(s) (eg, for dystonia, cerebral palsy, multiple sclerosis	
New	**64642**	Chemodenervation of one extremity; 1-4 muscle(s)	
New	**64643**	Chemodenervation of each additional extremity; 1-4 muscle(s)	Use 64643 in conjunction with 64642, 64644
New	**64644**	Chemodenervation of one extremity; 5 or more muscles	
New	**64645**	Chemodenervation of each additional extremity; 5 or more muscle(s)	Use 64645 in conjunction with 64644
New	**64646**	Chemodenervation of trunk muscle(s); 1-5 muscle(s)	
New	**64647**	Chemodenervation of trunk muscles; 6 or more muscles	Report either 64646 or 64647 only once per session

technology, devices and techniques. In recent years, miniaturization, powerful optical magnification and new imaging technologies have led to a wide variety of new applications for minimally invasive upper gastrointestinal endoscopic surgical procedures and improved diagnostic capabilities. Coding changes for lower gastrointestinal services can be expected for CPT 2015.

While the majority of CPT 2014 changes do not directly impact pain and anesthesia providers, it is important to note that changes to the CPT codes may result in changes in the work, practice expense, or malpractice relative value amounts and subsequent Medicare or other payer's fee schedules. In 2014, Medicare made significant and substantial adjustments in these values that will result in reimbursement cuts beyond the 20.1% SGR cut. A few examples are shown in the table below.

A Few Reminders Regarding Your Clinical Documentation

Moderate (conscious) sedation is billed based on the intra-service time which starts with the administration of the sedation agent(s), requires continuous face-to-face attendance, and ends at the conclusion of personal contact by the physician providing the sedation. Since moderate sedation is a time-based code the intra-service time must be documented in the medical record. In order to bill for the first 30 minutes of intra-service time, at least 16 minutes must be documented for 99144. An additional level, 99145, can be billed if 38 minutes of time is documented (each additional 15 minutes needs a minimum of 8 minutes).

When imaging guidance is not bundled in the surgical procedure it may be reported for the portion of the service that requires imaging as long as the documentation supports the medical necessity for imaging, and explains how it was used in the procedure, and that a permanent record of the image is maintained in the medical record.

Documentation of the patient's physical status and any co-morbidities should be included on all anesthesia records. Often this information helps to support the medical necessity of the need for anesthesia and, more importantly, it may result in additional revenue.

Joette Derricks, CPC, CHC, CMPE, CSSGB serves as Vice President of Regulatory Affairs and Research for ABC. She has 30+ years of healthcare financial management and business experience. She is a member of MGMA, HCCA, AAPC and other associations and a regular speaker at practice management conferences. She can be reached at Joette.Derricks@AnesthesiaLLC.com.

CPT/ HCPCS	Mod	Description	2013 Work RVUs	2014 Work RVUs	2013 Non-Facility PE RVUs	2014 Non-Facility PE RVUs	2013 Facility PE RVUs	2014 Facility PE RVUs	2013 Mal-Practice RVUs	2014 Mal-Practice RVUs
62310		Inject spine cerv/thoracic	1.91	1.18	5.33	1.81	1.17	0.79	0.16	0.10
62311		Inject spine lumbar/sacral	1.54	1.17	4.57	1.78	0.98	0.77	0.12	0.09
62318		Inject spine w/cath crv/thrc	2.04	1.54	4.86	1.46	0.74	0.57	0.16	0.11
62319		Inject spine w/cath lmb/scrl	1.87	1.50	3.07	1.59	0.82	0.65	0.16	0.12
76942		Echo guide for biopsy	0.67	0.67	5.43	1.35	NA	NA	0.05	0.05
76942	TC	Echo guide for biopsy	0.00	0.00	5.18	1.11	NA	NA	0.01	0.01
76942	26	Echo guide for biopsy	0.67	0.67	0.25	0.24	0.25	0.24	0.04	0.04
Reflects decrease in the value which equates to a lower reimbursement in 2014										

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Professional Events

Date	Event	Location	Contact Info
January 15-18, 2014	University of California, San Diego Anesthesiology Update 2013 Conference	Catamaran Resort and Spa San Diego, CA	http://anes-som.ucsd.edu/2014_update/
January 11, 2014	Georgia Society of Anesthesiologists Winter Forum	Atlanta Marriott Perimeter Center Atlanta, GA	http://www.gsahq.org/meetings
January 24-26, 2014	American Society of Anesthesiologists Practice Management Conference	Hilton Anatol Dallas, TX	http://www.asahq.org/PM2014
March 8, 2014	Michigan Society of Anesthesiologists Annual Scientific Session	Somerset Inn Troy, MI	http://www.mymsahq.org/home/tabid/55/ctl/viewdetail/mid/518/itemid/10/d/20140308/MSA-Scientific-Session.aspx
March 22, 2014	Washington State Society of Anesthesiologists Spring Scientific Meeting	Bell Harbor International Conference Center Seattle, WA	http://www.wa-anesthesiology.org/event-calendar
April 4-6, 2014	2014 Midwest Anesthesia Residents Conference	Marriott Chicago Downtown Magnificent Mile Chicago, IL	http://www.amaachq.org/marc.html
April 11-13, 2014	The Advanced Institute for Anesthesia Practice Management	The Cosmopolitan Las Vegas, CA	www.AIAPMConference.com
April 12-13, 2014	American Society of Anesthesiologists AQM Spring Meeting	Dallas, TX	http://education.asahq.org/aqm
April 24-27, 2014	California Society of Anesthesiologists 2014 Annual Meeting & Workshops	Hyatt Regency San Francisco, CA	http://www.csahq.org/up-more.php?idx=54
April 27-29, 2014	Medical Group Management Association 2014 Anesthesia Administration Assembly Conference	Hyatt Regency San Francisco, CA	http://www.mgma.com/AAA13-exhibitors/
May 17-18, 2014	Idaho Society of Anesthesiologists 2014 Conference	Hampton Inn Boise, ID	http://idsahq.org/blog/2014-conference/
May 16-18, 2014	Arizona Society of Anesthesiologists 2014 Annual Scientific Meeting	Scottsdale Resort and Conference Center Scottsdale, AZ	http://www.az-anes.org/annualmeeting/annualmeeting.html
June 13-15, 2014	Florida Society of Anesthesiologists 2014 Annual Meeting	The Breakers Resort & Spa Palm Beach, FL	http://www.fsahq.org/meeting/annual-meeting/

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