A regional anesthesia service offers significant advantages for patients and healthcare providers. Improved perioperative pain control directly benefits the patient while facilitating the work of the anesthesiologist and the surgeon. In recent years, ultrasound (US) guidance has undoubtedly played a prominent role in the evolution of pain control as evidenced by the growing number of clinical investigations focused on US-guided regional anesthesia techniques. The benefits of peripheral nerve blocks (PNBs), including continuous PNBs (CPNBs), are well documented and include reduction in time to achieve discharge criteria, lower opioid requirement in the postanesthesia care unit, decreased postoperative nausea and vomiting, and rapid rehabilitation. A dedicated regional anesthesia service can also have financial benefits for ambulatory surgical centers and hospitals. Although there are many published articles exploring the techniques and practice of regional anesthesia and US-guided PNB specifically, the same cannot be said about billing for regional anesthesia. In fact, a search of PubMed yields only 2 published articles on this subject in the peer-reviewed literature. The purpose of this article is to provide the most current information about billing for...
peripheral regional anesthesia procedures in the United States. Billing for neuraxial anesthesia, including continuous epidural infusion, is an established practice and will not be discussed.

- **Regional Anesthesia as a Business Model**

  Understanding the “big picture” of a regional anesthesia service can help put in context the details of a billing practice. A new regional anesthesia service should be considered a business model consisting of customers, suppliers, and investors with the final product being high quality pain control provided by PNB. Early identification of, and clear communication among, the involved parties is essential. In this model, anesthesiologists are the suppliers, and the single most important customer is the patient. The ultimate objective of regional anesthesia procedures is to provide patients with improved postoperative recovery. It is possible that higher patient satisfaction will translate into an increased demand for regional anesthesia as product information gets disseminated to other patients and surgeons. As patient satisfaction in the perioperative period is composed of many factors, simply eliminating pain may not necessarily lead to perception of a favorable surgical experience. Anesthesiologists should provide patients with adequate information about PNB and the anticipated effects to allay patient concerns. Another customer that must be considered is the surgeon. A surgeon’s willingness to incorporate PNB into clinical pathways can be a valuable asset for the anesthesiologist. A surgeon’s endorsement of PNB can also greatly increase the demand for regional anesthesia. However, it is important to disclose potential complications of PNB (eg, case delays, failed blocks, and falls) to set realistic expectations.

  As with any business model, investors need to be convinced that the product will maximize returns on their venture. Although providing patients with the highest quality pain control is the primary objective, reducing overall cost and/or increasing revenue will further convince potential investors to provide financial support for a regional anesthesia service. One investor is the anesthesiology group that may have to appropriate funds to acquire equipment (eg, US machine and continuous infusion devices), supplies (eg, needles and catheters), and possibly new personnel (eg, regional anesthesiologist or acute pain nurse). Another investor is the hospital administration. As global costs for surgical patient care are reduced and new charges are generated for the surgical center or hospital by implementing a regional anesthesia service, hospital administrators can be approached to offset some of the initial expenses. Alternatively, a business plan can be presented to hospital administration to solicit funding before initiating a regional anesthesia service if the program is desired by surgeons or administrators. The return on investment will be dependent on the model of
regional anesthesia service that is implemented and the volume of services. For example, if a hospital is willing to fund the salary equivalent of 1 anesthesiologist per day dedicated to regional anesthesia and acute pain management, a special arrangement can be established in which a percentage of the professional fee payments received for these services are given to the hospital.

### Cost, Charge, and Payment

Definitions of cost, charge, and payment in relationship to regional anesthesia procedures, specifically PNB, should be understood to communicate clearly about the finances of a new service. Cost can be defined as the amount of money needed to acquire necessary resources to perform PNB.

Charge is the amount of money the hospital and anesthesia practice bills for PNB and is usually not reflective of true cost. Regional anesthesia charges can include supplies, medications, and professional fees (typically issued by contracted or internal anesthesia billing services). The facility can bill for the equipment related to the delivery of regional anesthesia. For surgical procedures, a hospital or surgery center maintains a list of chargeable items, and it is important to ensure that items required for PNB (eg, needles, catheters, infusion devices, and medications) are added to the master charge list for billing. In hospitals that do not itemize anesthesia charges but bill a fixed amount for surgical procedures, it is recommended to create separate regional anesthesia bundles for single injection and CPNB to generate new charges. Single injection and CPNB charge bundles will differ in amount with the CPNB bundle being higher as it typically incorporates the cost of a perineural catheter kit and infusion device. For CPNB, the charge bundle may be the same for outpatients and inpatients if disposable infusion devices are used universally; however, the charge bundle for inpatients may be less if reusable infusion devices are employed on inpatient wards with disposable units restricted to outpatients. The addition of itemized charges should accurately reflect the resources required for PNB and minimize loss.

Paymen}t is the amount of money that is received for performing PNB. This amount is determined by a physician payment schedule and is not calculated from submitted charges. The resource-based relative value scale has been used by the Centers for Medicare and Medicaid Services since 1992 to establish the payment schedule and consists of 3 components: physician work, practice expense, and professional liability. On an average, physician work comprises 52% of the total relative value whereas practice expenses make up 44%. Physician work is based on physical effort, technical skill, mental effort and judgment, time taken to perform a task, and stress due to potential risk. These
factors are reviewed and updated each year. Practice expenses are based on Medicare-approved charges and are dependent on geographic location. The resource needed to purchase professional liability insurance makes up the final portion of the relative guide. For each procedure associated with a Current Procedure Terminology (CPT) code, payment is determined according to the resource-based relative value scale.

**Documentation**

To bill most effectively, a separate regional anesthesia procedure note should be designed to create a systematic method for charting and billing. The procedure note can identify the indication for PNB (e.g., pain at elbow), the referring team or physician (e.g., surgeon’s request for postoperative pain management), site of block (e.g., infraclavicular nerve block), nerve localization technique (e.g., US guidance or electrical stimulation), medication details (e.g., name, concentration, and volume of local anesthetic), complications (e.g., pain on injection and aspiration of blood), and the provider details (e.g., name, signature, and provider identification for billing purposes, if applicable) for the anesthesiologist performing the nerve block. Using the procedure note as the regional anesthesia billing sheet by including CPT codes can further simplify necessary documentation if allowable according to hospital regulations. Listing CPT and International Classification of Diseases diagnosis codes on the procedure note eliminates the need to create a separate billing sheet but requires the practitioner to perform his/her own coding. It may be helpful to review the form with billing personnel to ensure correct documentation of required information.

A unique regional anesthesia procedure note also distinguishes PNB for postoperative analgesia from intraoperative anesthetic techniques. Separate documentation decreases the likelihood of mistakenly bundling the PNB into the primary intraoperative anesthetic procedure. Later in this article, a code modifier is discussed that can help ensure that separate billing occurs. Although not essential, having different anesthesiologists perform and document the PNB procedure and intraoperative anesthetic can further clarify the distinction and possibly diminish claim denials. If the PNB billing is submitted for postoperative pain management, the operating room anesthesia record must not include nerve block as part of the intraoperative anesthetic technique to avoid double billing.

**CPT Codes and Modifiers for PNB (2011 Update)**

Familiarity with CPT codes and their relative value is important to decrease claim denials and maximize payment. The following
recommendations only serve as guidelines. Actual billing practices may vary according to billing services and anesthesia practices. It is advisable to meet with the billing service manager before initiating a new regional anesthesia service and on a regular basis to stay up to date on coding changes and payment patterns.

Codes for billing are categorized by the target nerve and not nerve localization technique (eg, US guidance versus electrical stimulation) nor approach (eg, anterior versus posterior, in plane versus out of plane). Commonly performed upper and lower extremity nerve blocks have distinct CPT codes for single injection and continuous catheter insertion (Table 1). However, exceptions do exist. For example, lumbar plexus (psosas compartment) block has a CPT code only for CPNB catheter insertion. Although 64483 (lumbar or sacral transforaminal epidural injection, single level) has been suggested in the past, the 2011 guide includes imaging with computed tomography or fluoroscopy in this code, which is not usually part of routine regional anesthesia practice. As there is no specific code for single-injection lumbar plexus block, no recommendation will be 100% accurate. However, coding options that can be considered and discussed with the individual billing service include: 64520 (lumbar or thoracic paravertebral sympathetic), 64450 (other PNB), and 64999 (unlisted). Brachial plexus blocks (eg, interscalene, supraclavicular, and infraclavicular) are grouped into 1 CPT code. The exception is the axillary nerve block, which carries a separate code for single-injection only.

For PNBs that are not listed, CPT code 64450 (other peripheral nerve) should be used. This code is appropriate for ankle, digital, wrist, and saphenous nerve blocks among others not specifically listed.

With continuing advances in US techniques and new applications of PNB for postoperative pain control, “new” PNB procedures have emerged over the past several years. Transversus abdominis plane (TAP) blocks, with and without US, have been shown to provide analgesia for inguinal hernia repairs and certain abdominal procedures. The latest edition of the CPT book (2011) still does not specify a code for TAP blocks. One recommendation is to use code 64450 designated for “other

Table 1. Current Procedure Terminology Codes for Common Upper and Lower Extremity Peripheral Nerve Blocks

<table>
<thead>
<tr>
<th>Target Nerve/Plexus</th>
<th>Single Injection</th>
<th>Continuous Infusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axillary</td>
<td>64417</td>
<td>—</td>
</tr>
<tr>
<td>Brachial plexus</td>
<td>64415</td>
<td>64416</td>
</tr>
<tr>
<td>Femoral</td>
<td>64447</td>
<td>64448</td>
</tr>
<tr>
<td>Sciatic</td>
<td>64445</td>
<td>64446</td>
</tr>
<tr>
<td>Lumbar plexus</td>
<td>—</td>
<td>64449</td>
</tr>
<tr>
<td>Other</td>
<td>64450</td>
<td>—</td>
</tr>
</tbody>
</table>
peripheral nerve” block. However, if the TAP block is performed to control postoperative pain after an inguinal hernia repair and ilioinguinal/iliohypogastric nerves are anesthetized, code 64425 (ilioinguinal, iliohypogastric nerves) can be used. Similarly, if subcostal TAP blocks are performed, it is conceivable that code 64421 (intercostal nerves, multiple, regional block) can be used as the primary nerve targets are the terminal branches of the intercostal nerves at multiple dermatomal levels (Table 2).

Paravertebral block (PVB) coding has changed since the beginning of 2010 to include imaging: either fluoroscopy or computed tomography guidance (codes 64490-5). There is no longer a specific code for PVB without image guidance. In the 2011 CPT book, category III codes for cervical/thoracic and lumbar/sacral PVB with US guidance are listed (Table 3). Category III codes are described as “temporary codes for emerging technology, services, and procedures. Category III codes allow data collection for these services/procedures.” Practitioners and their respective billing services are encouraged to use these new codes so that permanent codes for US-guided PVB can be established. As there is no specific code for continuous PVB, code 64999 can be used with an explanation detailing the indication and justification for the procedure. As claims employing 64999 represent unlisted procedures, payers may challenge these claims and subject billing services to a lengthy appeal process. Alternatively, a single-injection category III code (if US is used as described above) or 64450 (other peripheral nerve) can be applied. For single-injection PVB without image guidance, 64450 (other PNB) or 64999 (unlisted) may be applied.

Other PNB procedures may offer analgesic benefits for patients undergoing head and neck surgeries. Bilateral infraorbital nerve blocks

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**Table 2. Suggested Current Procedure Terminology Codes for Transversus Abdominis Plane Block**

<table>
<thead>
<tr>
<th>Target Nerve/Plexus</th>
<th>Site of Injection</th>
<th>Single Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ilioinguinal/Iliohypogastric</td>
<td>TAP for inguinal hernia repair</td>
<td>64425</td>
</tr>
<tr>
<td>Intercostal nerves, multiple, regional block</td>
<td>Subcostal TAP</td>
<td>64421</td>
</tr>
<tr>
<td>Other peripheral nerve block</td>
<td>Posterior TAP</td>
<td>64450</td>
</tr>
</tbody>
</table>

TAP indicates transversus abdominis plane.

**Table 3. Category III Current Procedure Terminology Codes for Ultrasound-guided Paravertebral Block**

<table>
<thead>
<tr>
<th>Injection Site</th>
<th>Single Level</th>
<th>Second Level</th>
<th>Additional Level(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical or thoracic</td>
<td>0213T</td>
<td>0214T</td>
<td>0215T</td>
</tr>
<tr>
<td>Lumbar or sacral</td>
<td>0216T</td>
<td>0217T</td>
<td>0218T</td>
</tr>
</tbody>
</table>
have shown to decrease postoperative pain for patients undergoing outpatient nasal surgery.\textsuperscript{15} As the infraorbital nerve is the terminal branch of the maxillary division of the trigeminal nerve, CPT code 64400 (trigeminal nerve, any division or branch) is an appropriate billing code. Codes for common head and neck blocks are listed in Table 4.\textsuperscript{11}

The modifier-59 indicates a distinct procedure and, when added after the CPT code for PNB, identifies the PNB as a postoperative pain procedure. This modifier applies irrespective of timing of the nerve block, whether performed preoperatively or postoperatively. Including the modifier is important so that the PNB is not assumed to be part of the intraoperative anesthetic technique. Subsequently, the details of a PNB procedure performed for postoperative pain management should not be included in the intraoperative anesthetic record.

For bilateral procedures, the code modifier-50 is added to the primary code. For example, bilateral single-injection sciatic nerve blocks for a patient undergoing bilateral ankle surgery are coded as 64445-50. Modifier-51 is used to indicate multiple PNB on the same extremity. A continuous femoral nerve block catheter and single-injection sciatic nerve block for postoperative pain control after a total knee replacement require 2 separate billing codes, 64448-59 and 64445-51, respectively. The modifier-51 will likely decrease payment but may also decrease the rate of claim denials.\textsuperscript{6}

\section*{Billing for US Guidance}

If US guidance is the primary mode for performing a nerve block, CPT code 76942 should be submitted as a separate charge. Utilization of this code requires documentation of needle placement and image interpretation. One way to fulfill this requirement is to attach a copy of the US image to the billing sheet with identification of sonoanatomy (eg, nerves, muscles, bones, vessels, and fascia), needle, and spread of local anesthetic. The code takes into account both technical and professional components involved in US use. The technical component incorporates costs required to maintain and store necessary US equipment (eg, US machines, transducers, and technicians). The professional component includes the physician’s application of ultrasonography and interpretation of US image only. If the US equipment is owned and maintained by

\begin{table}[h]
\centering
\begin{tabular}{|l|c|}
\hline
Target Nerve/Plexus & Single Injection \\
\hline
Trigeminal nerve, any division or branch & 64400 \\
Cervical plexus & 64413 \\
Greater occipital nerve & 64405 \\
\hline
\end{tabular}
\caption{Current Procedure Terminology Codes for Common Head and Neck Blocks}
\end{table}
the facility and not by the anesthesiologist, the modifier-26 should be attached to code 76942 to solely designate a professional fee. US should not be billed separately when it is included in the primary procedure code (eg, 0213T-0218T for US-guided PVB).

**Billing for Daily Follow-up of CPNB Patients**

Patients with CPNB catheter and postoperative perineural infusion need to be evaluated daily to assess for adequate pain control and absence of potential complications of an indwelling catheter. Unlike previous years, the CPT codes for CPNB no longer include 10 days of routine management. Furthermore, there is no specific CPT code for evaluation and management of CPNB patients unlike routine follow-up of patients with epidural analgesia. For daily rounds on established inpatient consults with CPNB, the range of evaluation and management (E/M) codes 99231 to 99233 can be used depending on the level of complexity.

When CPNB patients are discharged on the day of surgery, telephone follow-up may be billable in specific circumstances. If the telephone encounter is initiated by the patient or guardian, a related E/M service has not occurred within the previous 7 days, and the telephone consultation does not lead to a face-to-face visit within the next 24 hours, then the E/M range of codes 99441 to 99443 can be used depending on the duration of consultation (99441 = 5 to 10 min; 99442 = 11 to 20 min; 99443 = 21 to 30 min). For example, a patient with a brachial plexus CPNB discharged home the same day after wrist arthroscopy contacts the provider on call on postoperative day 1 with a question about the management of breakthrough pain. The provider counsels the patient over the course of 17 minutes to use the bolus feature on the CPNB infusion device in addition to prescribed oral analgesics. If the patient does not require in-person follow-up within 24 hours, the provider can file a claim using 99442 with proper documentation of the telephone conversation in the form of a progress note in the patient’s medical record. This would not be applicable for a patient who transitions from inpatient to outpatient CPNB management with previous E/M services.

**Billing for a New Acute Pain Consult**

With the implementation of a regional anesthesia service, it is not unforeseen that anesthesiologists will be consulted for acute pain management. Examples of consultation requests include evaluation of a patient suffering from pain in the postanesthesia care unit immediately after the surgery who may benefit from PNB or a hospitalized patient having difficulty transitioning from parenteral to oral pain medications.
The range of CPT codes 99251 to 99254 is appropriate depending on the level of complexity. Proper documentation of the encounter should include indication for the consult, physician or team requesting the consult, history, physical examination, assessment, and recommendations.

**Summary**

The practice of regional anesthesia continues to evolve with advances in technology and a renewed emphasis on optimizing perioperative pain control. Subsequently, changes in regional anesthesia billing practices should parallel the changes that occur in clinical practice to accurately offset costs required to provide patient care. Billing compliance and payment for services can be maximized by consulting with local billing services regularly to keep up with coding changes and new billing practices. An efficient and effective regional anesthesia service can benefit patients, surgeons, the hospital or surgery center, and those anesthesia providers involved in perioperative pain management.

Financial Support: None.

Mariano has received funding or material support for research investigations from Teleflex Medical (Research Triangle Park, NC), Summit Medical Products (Salt Lake City, UT), Stryker Instruments (Kalamazoo, MI), and I-Flow Corporation (Lake Forest, CA). Dr. Mariano has conducted continuous peripheral nerve block workshops for Stryker Instruments (Kalamazoo, MI) and I-Flow Corporation (Lake Forest, CA). These companies had absolutely no input into any aspect of manuscript preparation.

**References**


