Cardiovascular Group, Atlanta

Linking EP Patient Data to the EMR
The Figures Speak for Themselves

In this era of healthcare reform and decreasing reimbursement for independent practices, producing quality care has become synonymous with transparency and economic efficiency.

The Cardiovascular Group (CVG) comprises 16 cardiologists—four of whom implant EP devices—and serves five hospitals and eight satellite campuses throughout the greater Atlanta, Ga., area. In the fourth quarter of 2009, the group began integrating data from implantable cardiac devices—remotely transmitted from their patients’ homes—directly to its EMR. While CVG had been reaping the benefits of remotely interrogating EP devices via St. Jude Medical’s Merlin.net Patient Care Network since late 2008, which included increased revenues, reduced overhead costs and decreased manual processes, the benefits were enhanced when those data became integrated with the practice’s EMR (GEMMS ONE).

As a high-volume facility, CVG implanted approximately 1,530 cardiac devices (including pacemakers, implantable cardioverter-defibrillators [ICDs] and biventricular ICDs [CRT-Ds] from all manufacturers) between 2008 and 2010. Previously, patients with implanted cardiac devices were required to visit the office for device interrogations, which were typically conducted quarterly. However, when the practice implemented Merlin.net, two of those quarterly device interrogations could occur remotely via the Merlin@home wireless transmitter. St. Jude Medical’s ICD, CRT-D, CRT-P and traditional pacemaker technologies are tracked using RF telemetry that remotely monitors patient devices on a daily basis, which enables caregivers access to patient information through Merlin.net seven days a week, 365 days a year, and leads to a reduction in delays between event and clinical intervention. Recent research suggests remote monitoring leads to:

- A 50 percent relative reduction in the risk of death;\(^1\)
- Improved survival rates: 13 percent for ICDs and 15 percent for CRT-Ds;\(^1\)
- An 80 percent reduction in time to clinical intervention;\(^2\)

The paradigm shift of remotely following asymptomatic patients allowed CVG to spend more time with symptomatic patients, as well as to expand its business. In addition to the time saved by physicians and staff through remote monitoring, utilizing Merlin.net for de-

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**2010 Earnings After Merlin.net/GEMMS ONE EMR Integration**

<table>
<thead>
<tr>
<th></th>
<th>Medicare Reimbursement</th>
<th>2008 Medicare Reimbursement</th>
<th>2010 Quantity</th>
<th>2010 Medicare Reimbursement</th>
<th>Financial Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacing Two In-Clinic Checks with Remote Monitoring</td>
<td>$40.77–$80.50</td>
<td>$0</td>
<td>981</td>
<td>$71,668</td>
<td>$35,786</td>
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<tr>
<td>Clinic Staff Savings</td>
<td>$55,000</td>
<td></td>
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<tr>
<td>Office Visits</td>
<td>$40.09–$195.52</td>
<td>$41,850</td>
<td>695</td>
<td>$102,447</td>
<td>$60,597</td>
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<tr>
<td>EP/Ablations Studies</td>
<td>$584.96–$968.78</td>
<td>$343,586</td>
<td>485</td>
<td>$382,631</td>
<td>$19,045</td>
</tr>
<tr>
<td>Device Implantation (Pacemaker, ICD &amp; BV-ICD)</td>
<td>$445.19–$977.14</td>
<td>$299,595</td>
<td>537</td>
<td>$366,000</td>
<td>$66,405</td>
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<tr>
<td><strong>Total Financial Impact:</strong></td>
<td></td>
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<td></td>
<td></td>
<td><strong>$236,833</strong></td>
</tr>
</tbody>
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\(^1\) All revenue has been normalized to 2010 National Medicare Physician Fee Schedule (June 1 – November 2010).

vice interrogations can result in greater economic value. Medicare reimburses approximately $29 to $35 more for monitoring remote interrogations over a three-month period, compared with individual quarterly office visits for patients with pacemakers or ICDs/CRT-Ds.

**Practice management considerations**

The Merlin.net integration with the GEMMS ONE Device Manager occurred soon after the EMR rollout. Prior to this integration, individual patients could have two or three paper records for both clinical and device information. Even though the nursing staff was utilizing Merlin.net, their process was to print out all clinical events, which were stored as PDF files. Then, the staff would scan the files and attach them to the patient’s record, as well as manually enter device data into the record.

By seamlessly integrating patient interrogated reports and data between these two systems, the clinicians at CVG have one centralized electronic record with all their patients’ cardiology and electrophysiology data, resulting in a “tremendous reduction in physical reports,” says Niraj Sharma, MD, an electrophysiologist at CVG.

While the manual paper process took 24 hours for data to be entered into the patient record, the same automated process now takes about 15 minutes, says Elaine Coker-Smith, LPN, a triage nurse at CVG. Shortly after a patient transmits his or her information via Merlin@home, the nursing staff can access the data on Merlin.net, which brings any patient-activated interrogations to the attention of the CVG staff, she says. The nursing staff routinely checks the alert system portal in Merlin.net to monitor any abnormal findings.

Additionally, the current automated method provides patients with additional confidence in the monitoring of their conditions, as the transmitter will check the individual on a daily basis, as opposed to only during regularly scheduled quarterly check-ups. Merlin.net also gives the patient the freedom to travel because the Merlin@home transmitter can transfer data back to CVG from anywhere in the U.S.

Due to the automated process, the practice reduced staffing levels by two FTEs, who transcribed the data pulled from device interrogations into the patients’ record. This equated to a savings of approximately $55,000 annually, as each FTE earned $12 to $14 an hour (see figure on page one).

As a result, clinical decision making—measured from the time of transmission to the time a nurse or physician reviews the data—is far swifter, especially for asymptomatic atrial fibrillation patients, Sharma says.

“The time for a physician to make a clinical decision has been reduced from days to hours or even minutes,” Coker-Smith adds. “Now, once they are alerted to a problem, physicians can access the data in an electronic chart through any secure internet connection.”

Due to the Merlin.net/GEMMS ONE Device Manager integration, the billing process also has been expedited. Physicians can electronically sign off on reports, allowing them to get instantly adjudicated through the EMR via a billing portal to the payor. Coker-Smith, who manages billing, says the billing cycle due to electronic sign-off is “exponentially shorter,” resulting in a faster turnaround time for reimbursement. Previously, reimbursements could be prolonged or bottlenecked due to the requirement of a physicians’ physical presence for a signature.

**Directing caregivers to patients**

“Beyond the economic benefits, the automation in processing interrogations affords our clinical and business teams more time to deal with face-to-face patient interactions, rather than paper shuffling which doesn’t add value to the patient’s experience,” says David Donnelly, CEO at CVG. Due to the reduced routine check-ups in the office, the practice has been able to accept more new patients, as well as reduce wait times. Previously, new patients had to wait about three weeks for an appointment, and now, the average wait time is approximately a week. “Our schedules remain equally as busy, but we are able to take on new patients,” Sharma says.

In fact, CVG was able to expand its capacity to address community disease treatment needs. The practice billed for 431 new EP-related office visits in 2010 compared to 2008, a 164 percent increase. Likewise, the electrophysiologists are able to perform additional EP and ablation studies, which are necessary to diagnose and treat critically ill patients and reimburse at a higher rate. The practice earned about $362,600 in 2010 for these procedures—$19,000 more than the previous year.

“While we didn’t initially know what benefits would result from Merlin.net integration with our GEMMS ONE EMR, we now have discovered the benefits of expedited processes and reduced overhead costs,” Sharma concludes.