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Case study: Perminova EP at UC San Diego Health System

The nationwide transition to electronic medical records accelerated in recent years through funding and incentives from health care reform and economic stimulus legislation, as well as enhanced standards from the Office of the National Coordinator for Health Information Technology. Guidance from the National Coordinator also established criteria for “meaningful use” of electronic medical records to improve efficiency and patient care. To advance meaningful use, and to achieve better operational efficiency, quality of patient care and access to medical information by clinicians and staff, Perminova EP has been deployed at the cardiac electrophysiology (EP) labs at UC San Diego Health System’s Thornton Hospital, Sulpizio Cardiovascular Center and UC San Diego Medical Center.

Perminova EP, a customized module of Perminova Cardio, was tailored to meet specific requirements for documenting procedures at UC San Diego Health System EP labs. Perminova EP would handle patient, staff and procedure scheduling; pre-operative evaluation; and all data capture and documentation during the procedure, which would include medications and devices along with all nursing and doctor’s notes. Perminova EP also would be used for charge capture and billing. After procedures, the system would automatically create physician reports, eliminating the need for dictation and transcription. Perminova EP was compatible with other electronic medical records systems already in use at UC San Diego Health System.

Perminova EP’s web-based system was implemented in six weeks, a much shorter time-frame than for conventional client-server electronic patient information systems, which must be installed and upgraded on individual computers, devices and servers throughout UC San Diego Health System facilities. Because Perminova EP is browser-based, not device-based, it can be set up and upgraded remotely via the web at much lower cost and with much greater simplicity.

After deployment, Perminova EP automatically received existing patient information from the hospital’s electronic medical records system. Prior to a surgery, EP administrative staff entered all procedural information into the Perminova EP module, while patient demographics were automatically uploaded, creating a completely up-to-date patient record in real-time. Because Perminova EP is web-based, this record was immediately available via the web at any time and any place to clinicians and staff involved in the procedure. This system is accessible by any web-enabled laptop, PC or tablet. Dedicated, proprietary devices were not needed. At UC San Diego Health System, a major teaching and research system, clinicians and staff members have many duties and are spread out at multiple

locations, so easy access to comprehensive information about active cases is very helpful and improves efficiency.

Once the patient arrived for the procedure, Perminova EP was used to document all procedure-related data. Its web-based software moved logically through a series of screens matching each step of clinical workflow. A computer with Perminova EP live on the screen is kept open during the procedure while a staff member enters information including:

- Vascular access sites
- Drug administration
- Vital signs
- Devices and other supplies used
- Anticoagulation status
- Electrophysiologic data
- Mapping data
- Ablation data
- Billing data
- Nursing notes

Upon completion of the procedure, all data was automatically imported into a customized template, and an operative report was generated. The report was ready to receive the physician's electronic signature within minutes after the procedure's completion. Then the report was automatically uploaded into the patient's permanent medical record. There was no need for the physician to dictate and edit an operative report. A billing report including all billing codes also was automatically generated and sent to the hospital and medical group's billing offices. Since Perminova EP is compatible with third-party applications, the billing report also could be sent to an electronic billing application.

Perminova EP's web-based system has another benefit. UC San Diego is one of the nation's foremost research institutions. Applied biomedical and clinical research constitutes a significant part of the institution's research portfolio. Data on Perminova EP is centrally aggregated on the cloud, not imprisoned on individual servers. Rich information on treatments and conditions can be customized to researchers' needs, which also could facilitate clinical trials from multiple centers. And, Perminova EP's easy access through its web-based platform assists collaboration among researchers.

In conclusion, Perminova EP provided UC San Diego Health System EP labs with a secure and comprehensive web-based system that reduced costs and made billing, reporting, scheduling and case tracking easier and far more accurate.

Gregory K. Feld, MD, UC San Diego Health System's Director of the Cardiac Electrophysiology Program, and ranked by peer review as one of country's top cardiac electrophysiologists, said Perminova EP provided the following results:

- Increased revenue by 17% due to improved charge capture
- Improved physician productivity by eliminating report dictation and editing



- Reduced reimbursement denials to less than 1%
- Improved accuracy of data collection for mandatory registry reporting

UC San Diego Health System EP labs also found that Perminova EP improved patient care and safety by improving the accuracy and speed of reporting during and immediately after procedures. It also complied with all HIPAA guidelines.

Future enhancements to Perminova EP at the UC San Diego Health System EP labs will include an upgrade to Perminova EP 2.0 to improve flexibility and boost reporting capabilities. Among other improvements, Version 2.0 will expand features that enhance charge capture and electronic billing, allow bar code scanning of medications used during procedures and automatically forward a completed copy of doctor notes to the referring doctor at the end of a case.

About Perminova

La Jolla, Calif.-based Perminova develops and markets web-based software for use in cardiovascular surgery. The company is pioneering healthcare's move from outdated client-server technology to modern, secure cloud computing. Perminova offers customers Software-as-a-Service (SaaS), allowing them to take full advantage of a surgical information system that's more robust, flexible and cost-effective than currently available. In 2011, the company released Perminova EP, a software module that manages the scheduling, workflow and billing that occur before, during and after cardiac electrophysiological (EP) procedures. Perminova EP enables doctors, nurses and administrators to realize enhanced charge-capture, efficiency and patient safety. The software is currently deployed at leading cardiology centers throughout the United States, including UC San Diego Health System and Mount Sinai Hospital in New York.

