

## Lehigh Valley Health Network increases compliance with care protocols & realizes financial benefits worth \$1.5M over one year

MetaVision enabled LVHN to meet SCIP and PQRS initiatives, and to earn over \$1.5M in additional revenue capture, reduced billing service fees, and CMS reimbursements

### Health Network Profile

Lehigh Valley Health Network in Allentown, Pennsylvania, is a leading health network made up of three full-service hospitals, community health centers, community clinics, and home health and hospice services. LVHN has a wide range of expertise, including Level I Trauma, pediatric trauma, neurosurgery, cardiac surgery, renal transplant and more. With 988 beds throughout the network, LVHN treats 66,000 in-patients annually. Lehigh Valley Hospital (LVH) was ranked as one of the nation's top hospitals in *U.S. News & World Report* for 2011-12, and has made the national rankings for 16 consecutive years. Lehigh Valley Health Network was designated a "Top Hospital" by the Leapfrog Group for quality care and patient safety.

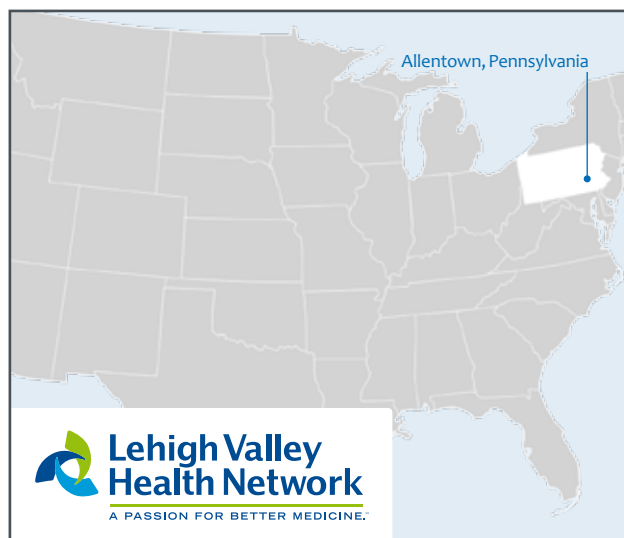
### The Need

LVHN decided to move from paper charting to an Anesthesia Information Management System (AIMS) in order to realize the many benefits that these systems offer. AIMS improve the legibility, completeness, and accuracy of anesthesia records. They record every detail of diagnoses and treatment throughout the duration of the patient stay, making data available for quality reporting. Further, embedded clinical decision support tools promote adherence to evidence-based best practices and regulations, resulting in increased patient safety.

Specifically, LVHN was looking for an Anesthesia Information Management System that would improve quality of care and increase compliance with CMS quality measures. Additionally, the network wanted to identify areas for increasing potential charge capture and billing efficiency. To meet these goals, LVHN needed a system that could be customized to support their specific workflow, both at the time of implementation and in the future.



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### At a Glance

#### Hospital profile

- > Leading health network which treats 66,000 in-patients annually
- > Designated a "Top Hospital" by the Leapfrog Group for quality care and patient safety
- > *U.S. News & World Report* top hospital for 16 consecutive years

#### The Need

- > Improve quality of care
- > Increase compliance with protocols
- > Enhance financial performance

#### iMDsoft Solution

MV-OR™, iMDsoft's Anesthesia Information Management System (AIMS)

#### Results

- > 99.6% compliance with perioperative temperature management protocol
- > Compliance with SCIP indicators rose 30%, from 62% to 92%
- > \$1.2 million increase in annual revenue capture
- > \$200,000 per year saved for billing & collection services
- > \$120,000 in CMS reimbursements

## The Solution

LVHN conducted an extensive evaluation of the available solutions, and found that MV-OR most closely met their requirements. MetaVision stood out from the competition due to its high degree of adaptability and its competitive cost. The network was impressed with MV-OR's clinical functionalities and system architecture, and with the scope of support and maintenance that iMDsoft offered. Additionally, LVHN chose MV-OR because of their previous positive experience with iMDsoft: Lehigh Valley Hospital had already successfully implemented MetaVision in their ICU in 2004. The hospital had also implemented MVcentral, iMDsoft's tele-monitoring solution, which enables intensivists to monitor ICU patients in multiple remote locations, and to access all their data from a single source. Using MetaVision, the hospital was able to provide intensivist bedside coverage 24/7, and their ICU mortality rate fell from 21.4% to 14.7%, a reduction of 31.3%.<sup>1</sup>

In 2005, LVHN implemented MetaVision in 48 ORs. Since then, they have expanded into 10 locations outside the operating room as well. With MV-OR, LVHN now has complete, anesthesia records, including accurate tracking of events, medications, and procedures. The system ensures that all billable events are registered, maximizing both professional fee capture and hospital billing. MV-OR supports the OR workflow and documentation processes, and has powerful decision support tools which improve patient care and adherence to internal protocols and regulatory guidelines.

MetaVision Event Manager issues smart notifications when specific changes in a patient's condition are detected, enabling timely clinical responses. It sends on-screen, email or SMS reminders for required actions such as initiating or discontinuing medications, activating care protocols, performing tests, or taking recommended safety measures.

With the introduction of MetaVision, caregivers were able to devote more attention to patients and spend less time charting. Soon after implementation, a high level of staff satisfaction was reported.

1. McCambridge M, Jones K, et al. Association of Health Information Technology and Teleintensivist Coverage With Decreased Mortality and Ventilator Use in Critically Ill Patients. Archives of Internal Medicine. 2010;170(7):648-653.

**“LVHN and our Department of Anesthesiology diligently investigated all available providers of AIMS solutions prior to our implementation in 2005. We believed then, and continue to believe, that MetaVision represents a ‘best-of-breed’ application for perioperative data management, and have been very satisfied with their product and support since making our decision.”**

**Dr. Thomas M. McLoughlin, Jr, M.D.**  
Chair, Department of Anesthesiology

## Results

Using MV-OR, LVHN has seen positive impact in the areas of improved patient care, increased protocol compliance, and enhanced financial performance. Further, the network is able to quickly and easily query their pool of records, which is beneficial both for quality improvement efforts and for research. MV-OR proved to be a valuable tool for recruitment, as it demonstrates the network's commitment to patient safety and accurate documentation.

### Increased compliance with care protocols

Using MetaVision's advanced decision support, LVHN created highly successful reminders for antibiotic administration. MetaVision Event Manager displayed prompts reminding clinicians to administer antibiotics within one hour of surgical start time, with these prompts recurring every 20 minutes if they were not acknowledged. Compliance with the SCIP indicators for documentation and administration of antibiotics within 60 minutes of surgical incision rose 30%, from 62% to 92%, and was associated with a decrease in the incidence of Surgical Site Infections (SSI) from 1.1% to 0.7%.<sup>2</sup>

Additionally, LVHN reached a compliance rate of 99.6% for PQRS Measure 193, Perioperative Temperature, designed to reduce incidence of perioperative hypothermia. The hospital customized MetaVision so that it sends messages to clinicians if patient temperature is too low, and now easily meets the threshold required for PQRS reimbursement.

### Enhanced financial performance

In an effort to improve revenue capture, the anesthesia department revised its materials billing process so that unique identifiers in the electronically documented anesthesia process would serve as triggers for specific billable items. At the end of each case, MV-OR gathers that information and sends it automatically to patient accounting, where the items are billed to the patient's insurance carrier. When tracking the changes in billed anesthesia items for the six months prior to and following implementation, LVHN found that their annual revenues from this new process increased by 1.2 million dollars.

Using MetaVision, Lehigh Valley Hospital developed a consolidated electronic professional fee billing report. The creation of this report enabled the hospital to negotiate a lower fee for billing and collection services, totaling nearly \$200,000 per year in reduced expenses.

The hospital used MV-OR to improve the accuracy of documentation for pre-surgical antibiotics and for recording clinician response to built-in antibiotic alerts. As a result, the anesthesia department realized an additional \$120,000 of revenue over one year in CMS reimbursements.

2. Schwann N, Bret K, Enid S, et al. Point-of-Care Electronic Prompts: An Effective Means of Increasing Compliance, Demonstrating Quality, and Improving Outcome. Anesthesia & Analgesia. July 25, 2011: Published online before print.